In Touch

Helping your blind child discover the world

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Colophon
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Lay out
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In this book we use 'child' and 'his' to refer to both sexes. The term parents also refers to carers. The terms baby, toddler, primary or pre-school school age child and adolescent are used according to age and context. The terms refer to both sexes.

The term 'blind children' refers to children whose visual impairment is such that they are not, or only to a very small extent, able to use sight in daily life. This means they have to depend on their remaining senses, including touch. Some children retain some residual sight which enables them to see movement or colour and distinguish between light and dark.

Preface

I am very proud to present In Touch, Helping your blind child discover the world. Its main theme is perception through touch. For many years I have been fascinated by the way blind children perceive the world. The challenge of going after an attractively coloured toy on the other side of the room is not for them. Unlike sighted children, blind children need to experience the joy of touching what surrounds them. How does mum's jumper feel? Is it nice and soft? Maybe she's wearing something exciting today, a necklace perhaps with different beads. Perhaps she's wearing earrings, too. With every tactual experience the world of the child expands.

As the child grows up, he will increase its store of tactual experiences independently. But even then it is important to accompany him on his journey so he will learn to attach meaning to what he is experiencing. The stick with the fabric around it that stands in the hallway will not be identified as an umbrella by a blind child. And it will certainly not be clear to the child that this apparatus once unfolded will protect you from the rain. Sighted children absorb this information simply by looking around: whenever it starts raining people are opening their umbrellas and continue on their way with a small canopy over their heads. All this needs to be explained to blind children.
Years ago, I asked a small girl what she thought an umbrella was. She said 'It's a stick with a round thing on top to catch the rain'. It sounded as if she had a fairly accurate idea of what an umbrella looked like but when I asked her specifically to describe an open umbrella, she said: 'well, there's a stick and this is the round thing that catches the rain'. She cupped her hands to show what she meant. Taking into account the girl's experience with water, this seemed a perfectly logical conclusion.
It also shows what a challenge the parents face: not only do they have to provide the child with as many tactual experiences as possible but they also have to ensure that the correct and full meaning of each and everyone of those experiences is understood.

Tactual Profile

About ten years ago, I and a number of my colleagues started the Tactual Profile project. We put together an observation instrument of the same name which enables professionals to observe tactual development in blind children. We subsequently published an activity book called 'Feel Free' aimed at carers, coaches and teachers. This book is full of ideas and suggestion on how to stimulate tactual development.
And now we have this book. It is the most important of all because it is meant for the most important carers and coaches of blind children: their parents!

Tactual Profile won the Disabled Healthcare Award 2008, made available by the Dutch Association for the Disabled (VGN). The money went towards the making of this book. We think it turned out to be a varied and colourful one.

Thank-you's

First and foremost I would like to thank the VGN for awarding us the wonderful prize which made our project possible.

I also want to thank the parents who agreed to be interviewed for this book. These intensive and sometimes poignant conversations form the basis of the wonderful stories you will find here. Thank you parents, for wanting to share your experiences with us and the readers!

Thank you also to the children and parents who participated so enthusiastically in the photo sessions which liven up this book. In spite of the many cramp- inducing postures and the presence of several over-enthusiastic coaches, you never flagged.

My heartfelt appreciation and thanks also go to the authors of the practical part of this book. In spite of their very busy professional lives, Anneke Betten, Anneke Blok, Annelies Buurmeijer, Monique Mul and Lilian Oosterlaak took to the task enthusiastically and conscientiously. Throughout the writing process, they remained conscious of the fact that the most important readers of this book are you, the parents of a blind child.

Thanks are also due to those who cast a critical eye over the text as it developed. Anke Hamelink, Ingrid Pelgrum and Leanne Vermeer: all your remarks were duly noted!

Lieke Heins has been invaluable for editing the theoretical part of the book and making my texts readable for parents and non-professionals. She also edited the interviews with the parents and turned them into the wonderful stories you'll find in part C of the book. Gerben de Boer, Heleen Deymann, Frits Grevink and Renske Koornstra have also contributed with their welcome additions. Thank you for your hard work!

Last but not least I would like to thank Royal Dutch Visio for freeing up some of the authors so they could work on this book!

Ans Withagen, March 2010

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General introduction

In Touch, Helping your blind child discover the world is aimed at informing you, the parents of a blind child, about perception through touch. In order to present you with a comprehensive look at the sense that is of such vital importance to your child, we have described the subject from a number of different perspectives. We hope this book will inspire you to set out on a journey of discovery with your child.

The book is divided into three main parts. Chapter 1 of part A provides you with some useful background information about touch and tactual development. Chapter 2 explains the importance of touch for your child as a means of making sense of the world. Examples are included to clarify and enliven the text. In chapter 3 we explore the factors that influence your child's tactual development. Here you will also find some suggestions as to what you can do to help that development.

Part B of the book contains ideas, tips, materials and activities which will stimulate tactual development. It is patterned on Tactual Profile although the first three categories have been re-named to enhance readability. This part of the book is the most colourful one in the book. Many of the proposed activities are accompanied by photographs of the materials you can use to play with your child. Whenever possible, we have tried to use photographs in which the children themselves are manipulating the material.

Part C is dedicated to the personal stories of parents with blind children. There are four interviews, each beginning with a brief sketch of the family situation. We asked parents about a number of subjects which have a bearing on the main theme of the book. One of the questions we put to them was how they went about introducing new information to their children. How did they explain certain situations and concepts? And on a more practical note, which changes did they make to their homes, or did they feel they didn't need to make any changes at all? Each interview concludes with a number of tips, for instance on leisure activities, and handicraft ideas.

Part D contains the additional chapters 'Useful tips at a glance', 'References' and 'A Glossary of Terms'.

In conclusion, it may be useful to know that you do not need to start reading on page 1: the three main sections of the book can be read separately. The practical part containing the suggestions for play activities is perfectly readable without the theoretical background. This goes for the interviews as well.

You are raising a blind child and helping it on its way. We hope this book will prove to be a source of inspiration to you.

1 What we know about touch

The traveller

I enter the station panting as I go. Sweat is pouring down the sides of my face and my heart is pounding. The central hall is chock-a-bloc.
The electronic notice board informs me that the next train to Amsterdam will start from platform 2a. A quick glance at the clock tells me I have exactly two minutes to get there. The smell of coffee wafts towards me but I can't stop. I have no time. Pity, I could do with the caffeine.

I zig-zag my way along the broad hall circumventing clumps of chattering schoolgirls and slowpokes. My heavy suitcase bumps against my leg at every step. The staircase leading to the platform has been closed off. I take the lift, which is already full of other heavily-laden travellers. They make way for me and the door closes, but only just. I feel the lift going up.

Up on the platform it's freezing cold. Just when I have deposited my suitcase under the sign saying 2a, a voice from the loudspeaker announces that the train to Amsterdam will be delayed by five minutes and will now be departing from platform 7b. I pick my suitcase up with a sigh and make my way to the lift. The entrance is already clogged up by numerous people and I decide to take the stairs at the other end of the platform.

It's a broad staircase and people are going up and down, hogging the railings left and right. I have no choice but to descend through the middle.
The suitcase feels heavier every minute.
My shoulder hurts. I have trouble keeping my balance. Someone bumps into me from behind.
I drop my suitcase. It descends the steps one by one and, on landing, bursts open ejecting books and clothes. 'Oh, I'm sorry', a woman's voice says. Her perfume lingers while I bend down to gather up my things. I take a final look to check I haven't forgotten anything and click my suitcase shut.

I run up the stairs to platform 7b and as I put down my suitcase I feel a tap on my shoulder.
It's the women who bumped into me. She hands me a cup of coffee. 'Sorry', she says, 'coffee?'.
I smile and take a sip. It's strong and I warm my hands on the cup. I can feel myself relaxing. I look at the clock while I grope for and find my plastic railcard among the shopping lists. The train is due in one minute.

Text: Renske Koornstra

1.1
The senses, a bridge to the world

In a single moment our senses provide us with all kinds of information. This is how we make sense of the world around us. Each sense has its role to play and together they form 'a bridge to the world'. The traveller in the story looks at an electronic notice board and listens to the voice from the loudspeaker which tells him the train has been delayed. He smells the coffee, and the perfume of the woman who bumps into him. He even gets to taste the coffee: it's nice and strong.

Apart from sight, hearing, smell, touch and taste, we have a number of other, less well-known senses like proprioception, the sense that perceives information from our muscles and tells us where our body is in space, the sense of balance, or vestibular system, pain awareness and sensitivity to temperature.
The muscle pain in the traveller's shoulder tells him how heavy the suitcase is. And his sense of balance makes him aware of the acceleration of gravity as he goes up in the lift. His muscles inform him the lift has come to a sudden halt because this sense makes him feel that special sensation in his stomach. The traveller also notices the extra pressure to the soles of his feet through his sense of balance.

Perceiving information

The nerves in our body receive the information, also called stimuli, from our senses and process it. But in order to receive information you must first perceive it. Stimuli are perceived most rapidly when a change takes place, a movement for instance. It may be difficult to spot a bird when it is sitting on a branch but once it flies off you will see it much more clearly.

When we perceive something with our senses, we subconsciously couple this information to the knowledge we already have. This enables us to attach meaning to it. The smell of fresh coffee may seduce our traveller, who is reminded of the invigorating effect it always has on him, but a person who is unpleasantly reminded of the stomach ache it produced will walk past the coffee booth as quickly as possible. The meaning we attach to something is called a 'label'. Labels are subjective: they are bound up with an individual's personal experience and knowledge.

Far and near senses

We classify hearing and sight as 'far senses' while touch and taste come under 'near senses'. Smell is also a near sense although arguably it could be both: the chippie on the market can be smelled from quite a distance.

The information coming in by way of one sense can be more noticeable than information coming in by way of another. Some stimuli do not get much of a chance at all. For many of us, sight is the dominant sense and therefore the most important. It allows us to take in a situation at a

Senses

Far senses:

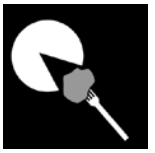
hearing

sight

Near senses:

touch (sensitivity through the skin)

smell



taste

vestibulair system (balance)

proprioceptive system (deep pressure/ position)

glance and that is why we rely on this sense for most of the things we do. This so-called 'visual dominance' is not congenital but develops over time.

Damage to one of the senses influences the way a person imagines the outside world. The way a blind child imagines an object or space will differ from that of a sighted child. Blind children have to compensate for the lack of visual information by using their other senses, or depend on them completely.

1.2 Touch

We are able to gather information through touch with most of our body and that makes it our most sizeable sense. Just compare it to our eyes, nose and ears. This allows us to perceive through touch using several parts of the body at once, for instance with our hands and feet. The inside of the hands and the face are the most sensitive to stimuli.

When we are born touch is the most influential sense of all. The information is instant and for that reason touch will remain important in later years as well. Sight will become the dominant sense in children with normal eyesight but for blind children touch remains a vital source of information. In order to help them develop their sense of touch as much as possible they need special coaching and training. Parents can make an important and special contribution by raising their child in an environment rich in tactual stimuli.

1.3 Forms of touch

Touch allows us to perceive in two ways: cutaneously and proprioceptively. 'Cutaneous touch' refers to touch sensitivity, or the perception of stimuli through the skin. It's this type of perception which plays a big part in the ability to distinguish the small raised Braille dots that make up Braille characters.
'Proprioceptive touch' is present in the joints, tendons and muscles and relays information about the position of the body and its movements. Blind children depend on this sense when they explore their environment. It enables them to feel the difference in height between two towers they have been building, for instance. They also need it to experience distance, the spaces between objects, the (relative) position of objects and the position of the body. When a long cane is used, the information picked up by the tip of the cane goes straight to the muscles and here too, proprioceptive touch plays a dominant part. The cane allows the user to feel the nature of the terrain underfoot (hard, soft) and identify obstacles. The vibrations caused by the contact between the stick and the object travel up to the hand. Every cane user benefits from a good transmission of vibrations.

Tactual information comes in via:

Cutaneous touch = perception of stimuli through the skin (cutis = skin).

Proprioceptive touch = deep pressure registration resulting from the information transmitted by muscles, tendons and ligaments.

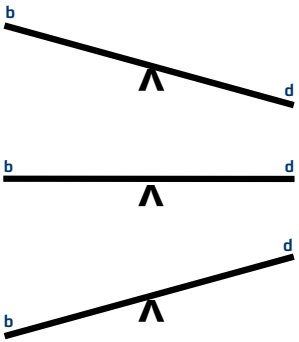
1.4 Functions of touch

In the early stages of child development, when the child is bonding with its mother, father or long-term carer, touch has an important function. The combination of calm movement, warmth and deep pressure will make the child feel safe when being touched. A baby carrier will keep the child snug and secure and in close touch with the person who is doing the carrying. A hammock is another great tool for providing the child with tactual feedback.

What is touch for?

Protective touch = This system informs us of the fact that we are being touched or touching something and allows us to withdraw in order to keep safe.

Discriminative touch = This system gives us information about the nature of what we are touching and the functions of objects (we can feel temperature, for instance and different textures).



Between the ages of 0 and 4, the protective system has the upper hand. Survival is key.

At 4, a balance between the systems is reached and the child begins to gain a clearer understanding of what he is actually feeling.

At 8, the child's tactual development is complete. The discriminative system has become dominant enabling the child to distinguish very precisely what it is feeling.

b = Protective touch d = Discriminative touch

Apart from proprioceptive and cutaneous touch, we also make a distinction based on function. Tactual perception is made up of a 'protective' and a 'discriminative' system. The protective system tells us that we are being touched or are touching something ourselves. In order to keep us from harm, the system makes us withdraw. It also works as an early warning system: 'Oops, this is hot! I had better not touch it again.' The discriminative system tells us about the nature of what it is we are touching by enabling us to distinguish between textures, like rough and smooth. Initially touch is all about the protection and 'survival' of the individual. This is why a very young child will often withdraw when being touched: 'Watch out, you're being touched!'

The child is still unable to distinguish between safe and unsafe tactual experience. Around the age of four, a balance is reached between the protective and the discriminative systems. The discriminative system will come to the fore while the protective system gradually loses importance. This is when the child begins to

explore his environment through touch. At the same time, the discriminative system is very useful for collecting information about the functions of the objects the child encounters as he explores, like rolling, falling or are making a sound.

1.5 Response to stimuli

Sometimes the child's protective system gives off too many danger signals. This condition is called 'tactile defensiveness'. The child experiences the sensation of being touched as unpleasant or painful and withdraws. Tactile defensiveness is especially common in premature babies who have spent a prolonged period of time in an incubator. It is a significant, negative influence on tactual development and efforts should be made to reduce it. Blind children in particular receive much of the information about their environment through touch and it is vital that the discriminative system gains the upper hand (see 2.4).

Heightened tactile sensitivity

There are two types of tactile defensiveness. The first type is the result of a heightened touch sensitivity, or hyper-responsivity, to tactile stimuli. Normal stimuli are experienced as unpleasant or even painful. Heightened sensitivity can occur anywhere on the body but can also be limited to certain areas.
The palms of the hand, the fingertips, the head, the area around the mouth and the soles of the feet can be particularly affected. Children with tactile defensiveness issues will try to avoid touching and being touched. This limits their opportunities for learning about the world. The many strong stimuli will also cause tension and loss of concentration.

Reduced touch sensitivity

The second type of tactile defensiveness is caused by a reduced touch sensitivity, or hypo-responsivity, to tactile stimuli. The child is unable to feel stimuli and goes in search of stronger tactual experiences, for instance by squeezing an object very hard. Children who are under-sensitive generally prefer objects with a hard and/or rough surface and may consciously or subconsciously hurt themselves in order to gain a tactual experience.

What do to

If your child shows signs of tactile defensiveness, speak to an early intervention coach, physiotherapist or occupational therapist. They will be able to tell you what further action should be taken.

1.6 Ways of touching

Active and passive touch

Touch can be active or passive and both ways provide us with different types of information. Passive touch allows us to experience

Response to stimuli

Hyper-responsivity to stimuli	=	**a heightened sensitivity to touch which makes ordinary stimuli unpleasant or even painful; children avoid being touched.**
Hypo-responsivity to stimuli	=	**a reduced sensitivity to touch; the lack of tactual registration often makes children look for stronger stimuli.**

temperature but won't give us a clear idea of what an object is like. For this you need active touch. While actively exploring the child is gathering all kinds of information about the object: is it round? Can it roll? What is this funny little hole and can I put my finger in it?

The development of touch strategies in children

Children start using specific touch strategies to get information about objects at a very young age. During the first few months, a child will predominantly use his mouth to explore. After a little while the hands are included. As the child grows older, the hand-mouth combination loses prevalence and the exploration of an object will be done mainly with the hands.
A child exploring his rattle is a good illustration of how a touch strategy develops.
While moving about in the playpen, the child coincidentally comes into contact with the rattle. Gradually he will learn to find it himself. The child brings the rattle to his mouth and also uses his hands to explore. At some point, the child will start paying attention to detail and explore the little knobs, bells and surface structures. He also discovers how much fun it is to manipulate (or play with) the rattle, for instance by turning the small bells or beads. This will also bring to his attention that the object can be made to produce a sound.
As the child's fine motor skills develop, touch strategies become more sophisticated. In part B of this book (Practical) we explain how you can stimulate your child's tactual development.

Specific touch strategies

The Canadian psychologist Susan Lederman and her American colleague Roberta Klatzky have done extensive research into the ways in which people try to gather information about object properties. They found that each subject used the same movements (or exploration patterns) to establish, for instance, the hardness of an object. In order to establish weight, a different set of hand movements was used. Recent Dutch research into exploration patterns shows that the touch strategies for

object property exploration employed by (blind and partially sighted) children and adults have much in common. The photographs below show some of the touch strategies (or the movement patterns Lederman calls 'Exploratory Procedures' or EP's) used by adults when they are trying to find out specific information about an object. This is largely a subconscious process: we learn about the properties of objects simply by alternating different hand movements. It only takes a very slight touch to know whether something is hot or cold. And if we want to know about hardness or softness, all we need to do is press the object. To find out about shape and size we simply enclose it with our hands.

Touch strategies

Moving the thumbs/ fingertips or rubbing will provide information about **Texture**

Enclosing an object will provide information about **Volume**

Lifting and moving an object about will provide information about **Weight**

Tracing the contours of an object with the fingers will provide information about its **Exact Shape**

Pressing an object will provide information about the material's **Hardness**

Static contact will provide information about **Temperature**.

Touch mats encourage young children to develop different touch strategies. Research into the use of touch mats shows that children develop and use more sophisticated touch strategies as a result of prolonged practice sessions on these mats.

Touch mats

Object properties that can be perceived by touch:

1. Vibrations	fast	⟷	slow
2. Surface structures	rough	⟷	smooth
3. Wetness/dryness	wet	⟷	dry
4. Surface temperature	hot	⟷	cold
5. Shape	complex	⟷	simple
6. Angle	steep	⟷	flat
7. Curvature	bent	⟷	straight
8. Hardness/softness	hard	⟷	soft
9. Weight	heavy	⟷	light
10. Elasticity	elastic	⟷	rigid
11. Pliability	pliable	⟷	stiff

1.7
Characteristics of touch

As we said earlier, touch, compared to our other senses, covers the largest surface area of the body. Although we have nerve endings all over the body, not all areas of the body are equally sensitive. Some areas have more receptors than others and these will be the most touch sensitive. Our fingertips and mouth are exceptionally well-equipped to perceive detail. Babies and toddlers often use the forehead, cheeks and other sensitive parts of the body to acquaint themselves with objects.

Sequential perception

Our eyes give us detailed information and an overall impression at the same time. This is called 'simultaneous perception'. Exploration by touch does not give us an instant 'bigger picture'. It has to be explored bit by bit. This means that the information enters our brain in small pieces, one after the other. This process is called 'sequential perception'. We then have to fit all the pieces together. Our sense of touch relies on our memory skills to a far greater extent than our sight: we can take in an object, like a new car, at a glance but blind people will have to explore and remember it bit by bit. Tactual perception not only taxes memory skills, it also requires concentration. If your concentration flags during the exploration process, part of the information will be lost and the final picture of the object will become distorted.
This is not to say that everything we perceive at a glance is also stored in the memory. In order to

acquire specific information, such as the number of car mirrors, we will need to use specific visual strategies. But in the main, we take in the object as a whole when we see it and do not become aware of the details until later. With tactual perception it is the other way around.
Let's examine a game of checkers. A sighted person benefits from the information he acquires by looking at the position of all the pieces.
A blind person, on the other hand, will have to store the positions of all the pieces and adapt his perception of them with every move. It is not an impossible task but one that taxes the powers of concentration, spatial skills and memory skills considerably.

Auditory perception is sequential as well. The order in which the sounds enter the ear is important: if the letters of a sentence or the notes of a piece of music change place, the message becomes scrambled. Touch is different. A child can explore an object in any number of ways and come to the same conclusion: for instance, that the object he is holding is really his own lunchbox.

Three dimensional perception

Three dimensional perception and tactual perception go together. It means that objects that can be enclosed by both hands are 'looked at' both from the back and the front. This is not possible by visual means alone. A window at the back of a three dimensional toy house can be discovered immediately by manual exploration but in order to see it you have to turn it around. In the case of small objects, touch gives us more 'all-round information' than visual perception.

Sighted people often fail to take into account that blind people can perceive the world in three dimensions. Almost everything is translated into something two-dimensional, such as maps and mathematical drawings. A three-dimensional cube is always drawn as a two-dimensional object. The outline of the back of the cube, invisible from the front, is represented by a dotted line. How is a blind person, used to enclosing and feeling the whole of the cube, supposed to make sense of that? Blind people do not recognise two-dimensional representations. They have to learn what each symbol and mathematical drawing means. In daily life, too, pictorial representations are an important source of information. You only have to think of the pictograms found on traffic signs, websites and train stations.

1.8 Forms of 'interpersonal touch'

Touch not only helps us gather information but also plays a role in our daily contacts with others. Shaking hands, embracing or kissing are all forms of 'interpersonal touch'. In this paragraph we describe a few examples of interpersonal touch. Coaches often use physical contact to explain things to blind children. During 'hand-over-hand guidance', for instance, the adult puts his hand on the child's in order to guide the child's hand as

Hand-under-hand guidance

he explores an object. It is important to establish whether the child likes this kind of guidance. Some children prefer to put their hand on top of the adult's hand. In this way, the child is able to 'peer' over the edge of the adults hand and decide for himself whether to use a large or a small part of his hand to explore with. Children with tactile defensiveness often prefer this method because it leaves them in charge of the number of tactual experiences they choose to undergo.

Another well-known example of interpersonal touch is the so-called 'protective touch'.
The function of this form of touch is to protect others. Holding back a child at the top of a flight of stairs to prevent it from falling down is an instance of protective touch. Shaking someone's hand comes under the heading of 'social touch'.

'Intimate touch' is the expression of intimacy through touch. A loving embrace or a comforting arm around the shoulder are examples of intimate touch. The primary function of 'recreational touch' is to amuse, for instance by tickling the child's tummy.
And then there's 'nurturing' touch. This form of touch is aimed at establishing a close emotional bond between the child and its parents. Rocking the child on one's lap or holding it very close are examples of 'nurturing touch.'

The blind traveller

I trace the grooves in the pavement which take me into the hall of the station. The echoing sound of voices, the loudspeaker system and a multitude of footsteps bounces off the high walls and the ceiling and end up in a garbled mess. The straps of my rucksack are digging into my shoulders.
At least it leaves me free to use both hands.
The station is crowded, people are running past me on all sides. I don't need to run. I have allowed plenty of time, as always.

I make a scraping noise with my long cane. The acoustic information tells me whether the guide line is running alongside a wall. Unfortunately, most people don't know what this sound means: they are in no hurry to make way for me.
I shout: 'Watch out! Excuse me!' It helps. Now I can continue on my way.
I know my train will start from platform 2a. I want the second flight of stairs to the left from the coffee corner. I can smell the coffee and that is how I know I'm going the right way. I would dearly like a coffee but I know I will be able to get one on the platform and decide to wait.

When I approach the second flight of stairs, my cane hits an obstacle. I feel my way around it.
It's very big. It has to be the stairs: I can feel the wind blowing down from the platform. I stretch out my hands to feel the obstacle that still blocks my

way. It's a plank and another plank below it, held together by a steel construction with legs sticking out. It's a big gate which is completely blocking the entrance. 'You can't go up here', a man's voice says. 'The escalator is being repaired. You can take the lift'. I stand still and try to figure out the lay out. If the gate is in front of the stairs the lift must be on the opposite side of the crowded corridor.

As I venture to the other side it is all I can do to avoid a collision with a group of chattering schoolgirls. There are a number of other people waiting to get into the lift. I drift into the lift amid the other travellers. There is not a lot of space. I can smell wet winter coats, a couple of different after shaves and one perfume. This tells me there is one woman in the lift. The door closes almost noiselessly. I can tell because people are crowding each other even more. I can feel the lift going up and reducing its speed as it nears the platform. Immediately after it comes to a halt, the doors open. I can feel the cold wind from the platform. The crowd turns into individuals again and I can feel the fresh air around me. As the people pour out of the lift I can hear the sound of single pair of heels. It sounds crisp and clear and it is heading around the lift shaft to the other side. That is where I have to go, too. I follow the sound of the heels until I find the grooves again.

From the left I can hear a double decker train pulling into the station. Then, suddenly, my friend John says: 'My, my don't we look handsome. Are we travelling together Kees? Would you like some coffee?' The heels are walking off in the distance. John rushes to the coffee machine and gets the coffee. I can hear the train coming in. I don't think John will be able to make it in time and glide my hand along the train to find the door. Pity, my hand will stink of steel all day long. I get in. John steps in after me. 'You didn't want any milk or sugar, did you?'
I walk into the carriage and feel my way around the seats until I find two empty seats across from each other. We sit down. As I grope for twenty cents coins between my five cents coins and two cent coins, the train starts. I can smell the coffee.

Text: Renske Koornstra and Gerben de Boer

2 Making sense of the world

2.1 Perception in children

People use all their senses to make sense of the world around them. Every sense is responsible for a unique part of the information about an object, a concept or the environment. Sight will give you information about the shape, size and colour of objects, while hearing will register the vibrations, echoes or sounds they make. By sniffing and licking an object we learn what it smells and tastes like. Touch, like sight, will give us an idea of the shape and size of an object but not of colour. It does, however, convey information about texture and temperature.

On the basis of what our senses tell us we build 'concepts'. These help us understand the world. Conceptualisation, as this process is called, does not take place in quite the same way in blind children as in sighted children. This is because their perception of many objects and other things in the extrapersonal and peripersonal space (or far and near space) is different.
Here's an example to illustrate this difference. For a sighted person it is easy to see the difference between a window pane and a mirror. This story was told by a blind girl: 'Two of the most complicated concepts I had to learn were window pane and mirror. To me they felt the same: both were smooth and often a little cold. I know now that sighted people can see their reflection in the mirror: when they stand in front of it they can see their own faces but they can't see through it. A window pane feels the same as a mirror to me but sighted people can look through it. It's really difficult to make sense of. To me, a window pane feels like a mirror which you can't look through to see the outside. I used to think it really strange that every time I had been outside my mother knew what I had been up to, even when she hadn't been there with me.'

To understand the different functions of this type of object is very difficult for blind children because they can't feel any distinguishing marks. Blind children will only perceive differences if they experience them. If you stand in a certain way in front of the window, your mother can see what you're doing. If you do the same in front of a mirror, she can't.

2.2 The importance of experience

Blind children need extra support to learn about the world. Language can be a help but we have to bear in mind that concepts that are constructed from language alone can be very misleading. One word may have several meanings.

Take the verb 'to swim'. When you swim, your body is partly under water but when fish swim they are completely submerged. Ducks float on top of the water and so do ships. Only when ducks do it we call it swimming and when ships do it we call it sailing. When a ship sinks is it swimming? What is the difference between floating and sinking? If something lies still on the bottom of the pond has it sunk? How about a flounder or a thornback ray lying flat on the ocean floor? Are they there because they sank? All this can be explained to a sighted child with the help of pictures and videos. You can take it to see a pond or organise an outing to a port. A blind child has to do without these clarifications. Something else is needed to help them understand.

The best way for a child to build up knowledge about a subject is through experience. As one layer is formed on top of another, the concept grows in complexity. Early intervention coaches invariably advise parents to take their children to as many places as possible. You could go to a street market and let them explore all the stalls. 'So this is what a cauliflower looks like'. Take them to the bakery and ask the baker if the child can explore, very carefully of course, the bread slicing machine. This will tell the child that each slice of bread is not baked separately and that a whole loaf can be cut up in slices. This sort of activity can be started at a very early age. Young children learn as they play and aren't bothered by feelings of shame. Older children often find it embarrassing when their parents still want them to have the 'hands-on experience' in some public place. Like other teenagers, they want to blend in and not be the centre of attention.

2.3 Words and concepts

There are many ways to categorise words. For blind children we have chosen the following categories:

- 'nearby' words (for instance, sock, ball, book)
- 'farther-away' words (for instance horse, apartment, cloud)
- abstract words (for instance, time, idea, because)

The difference between one category and another is not always clearly defined. The word 'horse' can be a nearby word for a child living on a farm and a farther-away word for a child living in a town.

Nearby words

Small children will focus on concepts that are linked to their basic needs and daily routines. They have no trouble forming a comprehensive, so-called 'nearby concept', especially if they have been able to have a wide range of experiences with one and the same object. It remains important, however, for adults to 'look out' for information that sighted children take for granted but often eludes blind children. The piecemeal way information is processed makes it difficult to make the connection between certain actions and events. Take the rubbish bin, for instance. The child has learnt that this is where you put your rubbish. But if you do not show the child the whole chain of events, it will

seem to him that the bin is a place in which you can deposit an endless amount of rubbish which then miraculously disappears. In order to prevent this idea from taking hold, parents can take their child on a 'rubbish trail'. They can start by asking the child to help change the bin liner (which is quite a challenge for the child's spatial skills, by the way), and then throw the bag into the big rubbish container together. You can take the child out to meet the rubbish collection truck when it comes to empty the container. A visit to a rubbish collection site would complete the trail.

Different versions of the same object

Some objects come in different shapes and sizes. Initially the child will take the word 'cup' to mean its own plastic cup with two handles he can grab. He has no way of knowing that cups may be made of porcelain and can have one instead of two handles. It is almost unbelievable that a fried egg and the boiled egg that is in slices on your sandwich are both made from the same egg. The oval shape you can hold in your hand is also that flat shape on the sandwich. It is nothing short of magic. And although the chair that was knocked over and now has its legs sticking out in the air feels quite differently, it is still the same chair.

In short, generalising a concept is a complicated process and blind children need help to do it. As a parent, you can try to make the child experience different versions of the same concept: 'You are wearing a pair of trousers. Daddy is wearing trousers too but his are much bigger and made of a different fabric. Feel it. Can you find the pockets? They are hidden because they have been sown inside the trousers. Yours are on the outside.' Discover the similarities between objects and try to describe the concept.
For instance: a cup is something you can pour lemonade into, or some other liquid. It has a handle so you can hold it. A chair is a piece of furniture you can sit on.

Other experiences

Some concepts are less complex than others. A ball seems a simple enough concept at first. A ball is an object which children can grab hold of so, like sighted children, blind children will discover soon enough that a ball can roll. But blind and sighted children will rate their experiences with the object quite differently. Whereas sighted children enjoy throwing a ball and running after it, blind children will become frustrated because throwing the ball equals losing it.

Floating language

Take care not to take it for granted that the child has fully understood a word. Small misunderstandings can distort the child's image of the world quite a bit and cause it to draw the wrong conclusions. Formerly, children whose understanding of a word was incomplete were said to be using 'meaningless language' or 'verbalism'. These days we prefer to call it 'floating' language. It means that children know and recognise certain characteristics of an object

but that some of the information is missing. Think of the girl with the umbrella in the preface to this book.
In 'Zweeftaal en andere raadsels in het woordbegrip van blinde kinderen' (Floating language and other riddles concerning the understanding of words by blind children) author Clara Linders provides a great deal of background information on how blind children's understanding of words develops.

Farther-away words

Farther-away words present a real challenge to blind children, mainly because the objects they refer to cannot be caught hold of or enclosed with the hands. The lack of concrete tactual experience makes it virtually impossible to develop a comprehensive image of such concepts. When you explain this kind of concept it is important to make the connection with the knowledge your child already possesses.

From small to big

How, for instance, would you explain a concept like 'city'? It is always best to start close to home, literally in this case: in your own house. One of the parents we interviewed took his children to a building site every week to let them experience how a house is built. It provided a wealth of experience for the children. Here was something they couldn't hold or enclose, i.e. a house, but whose development into a meaningful whole they were able to follow step by step. First the foundations were laid, then the walls went up with all the fittings for a kitchen. By exploring several floors, the children could experience that what is the ceiling of one room is the floor of another. They were also able to experience the difference in texture between bare walls and plastered walls.
Once you have tackled your own house, you come up against the tricky concept of the terraced house. One of our interviewee's daughters found it hard to imagine that a block of houses could consist of five different homes. In order to demonstrate to her that such was really the case her mother walked down the street with her, starting with the neighbour on the corner and ending with the last house on the street. The girl used her hand to feel the wall and established that there were indeed five houses attached to each other, each with their own front door and garden. From explaining the concept of a street it is not a huge step to explaining what a neighbourhood is. Many newly built neighbourhoods have tactile maps on which the child can feel streets and distances. You can then do the actual walk.

During the handicraft classes at the Visio school in Huizen the children are always invited to construct a house from small building blocks. The house is discussed floor by floor. This is both instructive and difficult for children. What is the difference between a slanted and flat roof, what do roof tiles look like and how can they be fitted together to form a roof? These are just some of the questions that come up regularly during the

Home made house and lighthouse

building process. Some children live in a house with a cellar, which is really an extra floor only it is situated underneath the house. Of course, proportion is taken into account. What should the measurements of the door be and how big do we want the windows? Children usually love building their own house. Some go completely overboard: the school still boasts a 75 cm high, four floor

lighthouse, the gift of an enthusiastic former student.

Scale models
Sometimes scale models are used to provide an approximation of the meaning of a farther-away word. While it is impossible to enclose a car with your hands, you can hold a toy car. Whenever possible you should let the child experience the real thing with the model as a starting point. After having felt the wheels on the toy car, take the child outside and let it find them on a real car. 'Are they on the underside of the car? And what are those long plates on the front and the back? Do the other cars in the street have them, too? Does my toy car have them?'

German foil
German foil is another useful explanatory aid and is used to make tactile drawings. You could, for instance, draw a windmill, let your child feel it and then go on an outing to a windmill to compare the drawing to the real thing.
Children who have some sight left or who have become blind a later age find German foil a helpful tool. Children who have been blind from birth do not make the connection between a two-dimensional drawing and an the real, three-dimensional object it represents. They have trouble interpreting the drawing. To them it is not a representation of a real object but more of a 'symbol', like letters or figures. As we remarked earlier, three-dimensional perception is a typical feature of touch.

Animals
The names of animals also belong to the farther-away word category. Birds fly and so are out of reach and can't be held. Stuffed birds are sometimes used to give children an idea of size and of what the beak and feathers of the animal are like. But some concepts can't be explained like this. A dead animal feels very different from a living one. Think of temperature and hardness alone. It is also difficult to imagine an animal as it moves. It is not easy to explain the prowling gait of a leopard. By making the child experience different gaits, he can build up his knowledge about an animal.

Sometimes adults do not realise that their children's concept of certain movements is not quite what it should be. The following example will show you what we mean. A group of blind children between the ages of 3 and 6 were invited to explore different kinds of fish bought at the local fishmonger's. Fish are not the most usual kind of animal brought in for exploration purposes and none of the children had ever felt one before. When told to pretend the fish were swimming they all put the fish upright, with their heads in the air. They all thought fish moved through the water in a vertical position, like people. One of the girls had a very clear idea of what a bird sitting on a branch must look like. 'How does the bird sit on the branch?' she was asked. 'It's just sitting', she answered. Just like you're sitting on this chair?' 'Yes', the girl said without the least hesitation.

Abstract words

The meaning of abstract concepts can't be discovered through touch either because they are not tangible. Children learn these words by having them explained to them by others and by listening to how these words are being used in language. This is no more difficult for blind children than it is for sighted children. One exception is the use of determiners, like 'that' and 'those' or 'here' or 'there'. It is very easy to say: 'The computer is over there' but where is 'there'?

2.4 The attitude of the child

Is your child curious and willing to explore? Is it driving you mad with its endless questions? Good. Attitude is a key element when it comes to learning new concepts. Children who are interested in the world around them will build up the most comprehensive concepts. Spontaneous exploration of objects or playing with parts attached to objects also helps. The combination of spontaneous exploration and asking questions at the same time – 'What is this?', 'What is this used for?, Is this like..' – is the best learning attitude.

Coaches and carers must do their utmost to stimulate such an attitude. They have to make sure, however, that the environment the child is going to explore is safe. Children who do not feel safe, for instance because they have had a number of unpleasant experiences or have been told one too many times to be careful, will avoid to seek out an object and wait until it is brought to them instead.

Children with tactile defensiveness do not like to explore spontaneously either and consequently much of the information in their environment remains undiscovered. Much extra care and attention is needed to reduce defensiveness and tempt these children to explore on their own.

3 Factors that influence tactual development in blind children

3.1 The (home) environment

A child's intelligence (or cognitive skills) is determined by ability and environment. This means that the way the environment is designed influences the development of your child. It is important to create an environment which challenges the child to explore independently. In other words: you must tempt your child to explore the world through its senses. Touch is very important in this process.

Safety first

The living room and the child's bedroom are two of the rooms where your child is going to spend much of its time. In order for the child to feel safe enough to explore, the spaces need to be uncluttered and have a clear lay out. With the furniture in a fixed spot, the child will be able to make its way around the room independently.

This will familiarise him with all the objects in it. Take care that there are no frightening or sharp objects along the way that can hurt him. If you do have to move the furniture it is best to explore the new situation together. It also helps to have a fixed place for toys and other material. A child is much more inclined to seek out his things if they are easy to find.

Encourage your child to explore

The environment does not only offer safety and structure, it is also full of stimuli. One way of encouraging your child to discover his environment is to set aside a designated corner of the room as a play corner in which you put familiar as well as unfamiliar toys. For young children a clearly defined play area is best, for instance a mat or a corner separated from the rest of the room by a book case. As soon as the child is able to find the play corner on its own he will become less dependent on grown-ups. Being able to make his way to the play corner unaided and whenever it takes his fancy also helps the development of the child's sense of autonomy ('I can do this myself!')

The child's journey of discovery can be made much more interesting by placing objects along the way, such as a bowl filled with shells or pine cones, or a small tactile painting (that the child can make itself). A kitchen cabinet full of unbreakable kitchen stuff, such as plastic containers, different kinds of spoons, a colander and baking shapes, makes for a fun and

Autumn display

instructive place to return to, especially if mum and dad are cooking. The nice cooking smells and a taste of something good every now and again make the kitchen even more fun. Sticking Braille labels on objects around the house is another way of giving information to your child. For children between 3 and 6 it is also fun just to encounter tactile letters. After all, sighted children are confronted with letters everywhere they go, in supermarkets, traffic and in the classroom.

How to use play material

The mere presence of a toy is not going to make a blind child play. Sighted children are attracted by what a toy looks like but blind children need a much closer acquaintance with the material. If you wish to encourage your child to play it is advisable to take the child's preferences into account in your choice of toy. If your child favours his sense of hearing you should use a toy that makes a sound. It is only when the child derives pleasure from playing that it will start to explore spontaneously.
It is important to have a range of different toys. If you only have toys that make a noise, the child might become passive. Try to include toys that challenge the child to do more than just push a button. Some creative parents make their own toys as you can see in the photograph below.

Home made touch boards

3.2 Physical ability

Physical ability and touch

A child's physical ability influences exploration by touch. Health and fitness determine how well a child is able to muster the attention necessary for a tactual task. Without attention, the ability

to perceive diminishes and certain signals will not be picked up. Professionals working with blind children have noticed that a cold or an ear infection can affect touch sensitivity. As yet we have no proof or explanation for this phenomenon.
Good tactual perception depends on well-developed fine motor skills. It is especially important that a child can move its thumb and fingers in different ways and independent of each other. A good cooperation between the left and the right hand is important as well. The two hands can then be allocated different tasks, for instance when opening a jam jar. One hand holds on to the pot (fixating hand) while the other screws off the lid (dynamic hand). Good fine motor skills are also needed to pick up very small objects and to distinguish stimuli.

How other disabilities may influence touch

Some children have more than one disability. Apart from a visual disability a child may have a motor or mental disability which will often have an adverse effect on tactual perception. Especially neurological (nervous) disorders will affect the child's ability to process tactual information. Children who have reduced muscle tension due to spasticity or paralysis do not experience stimuli in the normal way. Even minor changes in muscle tension can have a big effect on how different tactual stimuli are perceived (unpleasant or pleasant).
Gross motor skills conditions do not seem to affect tactual perception very much although they can still cause some perception problems, for instance during tactual tasks that stimulate body awareness. Assuming lots of different and unusual body positions as a way to discover the body may prove difficult. 'If I want to crawl underneath this table without bumping my head how small should I make myself? And can I also crawl underneath the chair or should I be even smaller? Can I do that?' The tactual exploration

Unscrewing a jam jar

of large objects or the perception of differences in height may also be a problem if gross motor skills are insufficiently developed. Apart from the gross motor skills themselves, the orientation and 'control' of movement is an important element in tactual functioning. This sense of balance is controlled by the brain's motor cortex.

3.3 Personality traits

A child's personality also influences the way touch is used. Depending on the nature of earlier experiences, the child's personality can have a positive or a negative influence on his tactual development. A negative experience will affect a shy child more than a confident child. In the next paragraph we mention a number of character traits that may influence tactual development. The list is by no means exhaustive. An explanation of all personality types is beyond the scope of this book.

Curiosity about the world

A child who is curious about the world will be motivated to actively explore it. Comprehension skills influence curiosity: a child will not be interested in something new if it is unable to attach meaning to it. If you as a parent want to stimulate curiosity and initiative in your child you would do well to take your child's preferences into account. Then you can slowly but surely broaden its interests and add to its store of general knowledge.

Self-confidence

Confidence in your own abilities is largely attributable to positive experiences in the past. Success is an enormous boost to people's confidence. There are children (and adults) who do not attribute their success to their own abilities but to coincidences and other factors outside their control: 'I gave the right answer because the question happened to be a really easy one'. This attitude is decisive when approaching new tactual tasks and touch sensations. It also works the other way around: 'I couldn't do it because I'm so clumsy'. Self-confident children usually do not need much encouragement to seek out new tactual experiences and this helps the development of their sense of touch. However, a child whose eyesight is diminishing will find it very difficult to rely on touch because it is a sense that he has not used in quite this way before. The resulting insecurity will negatively influence his tactual development.
It is not just self-confidence that decides a child's success when tackling certain tasks. Perseverance, concentration and frustration tolerance (the way the child copes with disappointments or difficulties) are important, too.

Coping with a visual impairment

Children who have been blind from birth have no conception of the visual world. This is why they will not resent the fact that their way of discovering the world is through touch. Children

who become blind at a later age, for instance as a result of a tumour or an operation, often have a completely different attitude.
They have difficulty accepting their disability and feel angry at being restricted. Touch to them is second-best and in some cases they will show tactile resistance or even a fear of touching. This prevents them from accessing the information that can be obtained through touch. Children with some remaining sight can be hesitant to start trusting their sense of touch too much. Their unconscious fear is that it will make them 'go blind' completely. It is very important for coaches and carers to find out what the reason is for the child's resistance to touch. Forcing a child to overstep his own boundaries will inevitably result in more resistance and stress and will be detrimental to his development.

In the past, children were often forced to rely entirely on Braille. Unfortunately, whatever residual vision (the remaining eyesight) the child had was neglected. These days we try to be more sensitive to the way children cope with the fact that their sight is diminishing. Parents and experts together decide on a strategy that combines both touch and residual vision.
One such strategy might be to let the child use its remaining sight during mathematics or geography lessons, perhaps with the aid of a magnifier, and have him rely on Braille when taking language classes.

3.4
Mental ability and development

A newborn baby doesn't distinguish between his body and that of his mother. As he gets older, the child discovers that it has a separate body with experiences of its own. He will also develop a mind of its own and a desire to become independent. In time he will discover the properties of the people, things, animals and the space that surround him. The more experiences the child has, the more concepts he will learn and understand: 'A dog has four legs, a mouth to eat or bite with and a tail. A cow also has four legs, a mouth and tail but it isn't a dog. They are both animals. They are different from humans. A bird is nothing like a dog or a cow. A bird can fly but it is still an animal. A plane can fly too but is not a bird. It's a thing made by people.'

Person and object permanence

This is what very young babies experience: 'If my mother is not with me she doesn't exist anymore. If I cry she will come back'. An important difference between sighted and blind children is the time it takes to realise that a person or thing does not just disappear. A sighted baby can see his mother going into the kitchen and knows she is still there albeit a little farther away. The ball that has rolled off is also still there. It is different for blind babies. The moment the blind baby stops feeling his mother's body it is as if she has disappeared. The ball that has rolled beyond his reach is gone completely, too. It gives off no

signal to make him believe otherwise.
The realisation that both mother and ball are still there although they can't be felt, is called person and object permanence. This is a very important milestone in the cognitive development of a child and one that blind children usually take a little longer to reach.

Mental development

Intelligence, also called mental development or cognitive skills, is the ability to attach meaning to experiences, in other words, to retain and use the information that enters our brain to make sense of the world. Intelligence can be measured by means of an intelligence test. There are several different kinds of intelligence. Verbal intelligence is the ability to understand language and use it logically. It is linked to general knowledge and vocabulary. Spatial intelligence is a more action-related form of cognition and refers to spatial and technical insight. A child who absorbs a lot of verbal information but doesn't actually experience very much will be verbally intelligent but not spatially intelligent. Spatial skills are very important when it comes to learning to read and do arithmetic. They are also important for the development of self help skills and for inventing and applying handy (touch) strategies.
Our cognitive skills are partly determined by our genes but a stimulating environment can go some way to enhance them. It is as if we were all born with a tool box. Some people's tools are top of the range and some have to make do with lower quality tools. But cognitive skills, or tools, are not very much use if you do not learn how to use them. Practice may not make perfect but it will help you find out what your possibilities and limitations are (and what you can and cannot do independently).

Some children are able to process more new information than others. This has to do with memory skills but also with the experiences and knowledge already present. A small child will have trouble understanding simple sums while a child of secondary school age will be able to cope with complex mathematical formulas. A child with good cognitive skills will be better able at processing and retaining complex information.

The role of the adult

In order to start exploring, a child must feel curiosity first. Sighted children are tempted to explore by looking at an interesting object or event. Blind children find sounds interesting and challenging too but they may also feel threatened by them, especially since it is impossible to investigate the source of the sound from a safe distance. Touch, by definition, requires closeness and closeness may also bring danger. This is why, in order to expand his range of experiences safely, the blind child needs the help of adults much more than a sighted child.

Petting a snake in the zoo is an experience which, linked to the information the child already has about the animal, will result in a fairly accurate

representation. The zoo keeper holding the snake could let the child feel the difference between the scales on the back and the belly of the animal. The scales on the belly protrude slightly to enable the snake to move quickly. They even provide enough grip for the snake to slide up a tree or swim in water.
A blind child that has been told that snakes are very dangerous won't want to touch one and an important experience will be lost through fear and insecurity. He makes do with the explanations of others and won't complement this theoretical knowledge with the actual hands-on experience which will help him to form an representation of the animal. Neither will he learn to use the information to ask himself what other snakes might look like, or how a snake is different from a worm. Parents can do much to help by creating as many opportunities for tactual experiences as possible. With every discovery your child will become more inquisitive and willing to explore.

3.5 Touch strategy

Planning

Touch strategy is the way the child uses touch when doing a particular task or game. You might think a child would go for the most efficient strategy but that is not always the case. Some children will start out with a quick overall exploration of an object or surface even before they know what is expected of them. This rapid inventory is a way of gaining control of the situation. Children who have developed a resistance to touching will only touch an object once and then very quickly. They would rather ask questions about the object in front of them than touch it.

When faced with a practical task, the child will have to figure out the order of the actions required. Otherwise things will end in chaos and confusion. Take the process of pouring a glass of milk. In order to do this properly, you must first make a plan. The first thing to do is to open the carton. Some cartons have a screw top, other have to be folded open. This is not the easiest of actions and is quite a challenge for the child's spatial skills. It also requires patience and concentration. If the child does not pay attention for even a second, things will go wrong and the milk will end up on the table. Once the carton is open, the child can start pouring the milk into the glass. This, too, needs strategic planning. The glass, after all, is much smaller than the carton and it is important not to knock it over or pour in too much milk. The child will have to take all this into account before it can pour the milk. Sometimes asking questions helps. 'What would be the best way of holding the glass when you pour the milk? How can you tell when the glass is almost full? Where would you put your index finger?' After having done this a number of times, the child will be able to perform the actions independently and will no longer need to rely on your questions.

Structure

In order to tackle complex tasks, the child has to learn to work in a structured way. School tasks usually involve working from left to right and from top to bottom. When laying the table you always go about in the same way too, with the plates, the knives and forks all in their own fixed place.

Not all children are equally adept at working out how best to structure an activity. One way of solving the problem is to discuss and practice the action sequence with an adult. Of course it falls to the teachers and the itinerant teacher or early intervention coach to teach the child these solution strategies. They will teach the little ones to sort their toys into sorting containers and later, during geography class, they will explain the best way to explore a map. At home, it is the parents who can help out. Finding the right Lego building block, for instance, will become much easier if the different types of block are sorted into containers according to the number of knobs.

Different touch strategies

Most children favour a particular touch strategy. Some children like to take a quick tactual inventory of an object while another likes to start with the details. Both ways are needed, however. Some tasks require good detail perception and others are best tackled by keeping a general overview. Often the best way to start is to establish a general impression of the size of the objects before moving on to the details.

School tasks usually require a combination of the two strategies. A general exploration will tell the child how big something is, or where the marbles are on the table. But to find out how many marbles there are, he will have to explore in more detail.

Reference points

Every blind child learns how to use so-called 'reference points'. Reference points are fixed spots which make orientation easier so the child is not forced to start the exploration process from scratch every time it wants something. It is advisable to place your child's mug just above the plate to the right. The plate can then be used as a reference point so the mug can be easily found. Tactual training in schools always includes the use of reference points. Children are told that every object has a 'anchor point', or fixed spot. If they want to put their coats on, for instance, they first locate the hood. By putting the hood on the head, their arms will automatically find the right sleeves. The ears of a toy bear can also be used as a reference point, for instance to find out whether it is sitting up or lying down. Older children who use raised relief maps during geography class, benefit from fixed reference points they can return to. The Netherlands is easy to recognise because of the distinctive shape of the province of Zeeland with its delta, and the characteristic Wadden Islands.

Different manifestations of the same object

'Turning objects around in your head' (mental

rotation) is not easy for blind children and can hamper their efforts to get to grips with objects and events. The world can easily become a very confusing place when things go topsy-turvy. A chair for instance, feels completely different with its legs sticking into the air and blind children are not likely to identify it as a chair in its prone position. What you can do as a parent is let children experience objects in all the different ways they can manifest themselves. That will make them understand that an object, whether it is on its side or upside down is still the same object. Experience alone, in school and in the home, will bring this lesson home.

Concentration and attention

Obtaining information requires concentration and attention. Blind people have to use their powers of concentration for nearly everything they do. There are few activities (like lazing in a chair or a hammock) that do not make demands on their concentration skills. For a blind person a nice, relaxing walk in the woods is anything but. He will always have to pay attention to his surroundings and make sure he is able to find his way home. Blind children are busy 'getting their head around things' all the time so they need at least a few moments of respite in a day.

Gaining an overall impression

In chapter 1 we explained the great difference that exists between sight and touch. Sight enables you to take in a lot of information at a glance while touch allows you to take in the information bit by bit. This makes it difficult for blind people to gain an overall impression. In order to establish which objects are on the table, they need to explore it section by section. Only then can they put all the pieces of information puzzle together and form a complete picture. Concentration and memory skills play a very important role: if one part of the table is not explored and a piece of the puzzle is missing, chances are that the sugar bowl, or any other object, will not be found.

Influences on concentration and attention skills

The time a child spends on a task often depends on the nature of the task and the interests of the child. This so-called 'attention span' increases as the child grows older. Apart from concentration, distractibility also plays a part. Sighted children will be distracted by visual stimuli while blind children will pause in the midst of exploring when they hear an unusual sound. Some tasks are easier to resume than others. A child distracted while reading a page in Braille will have to go back to the beginning of the sentence, for instance. Sounds are not just sources of distraction. They also convey extra information about the environment. Blind children who are doing their best to concentrate usually turn one ear towards the source of a sound, their head cocked in the typical listening attitude of the blind. Maintaining this kind of focused auditory attention requires good concentration skills.

3.6 Memory

We train our memory skills from an early age. Our memory enables us to recognise information that we have gained earlier, a process without which we would scarcely get any rest. It also helps us to extrapolate: 'Here, at the top, is the label with the print so this must be my coat.'

Verbal and non-verbal memory

Memory can be divided into verbal and non-verbal memory. Verbal memory is made up of words and language while visual memory contains visual imagery, tactual impressions and movements. Some children are language-orientated and can conjure up an image at the mere sound of the word. Other are better at remembering when they explore (part) of an object: 'Oh yes! That's the music box. I want to play with that!'

In order to process information more effectively, both the verbal and non-verbal memory skills can be combined. They complement each other, as the following example demonstrates. If you tell a child about the things in auntie Ann's toy box, you only activate the verbal memory skills. If you lift the objects from the box one by one and let the child explore them while telling him what they are at the same time, you activate both his verbal and non-verbal memory skills.

Short-term and long-term memory

When it comes to storing information we distinguish a short-term memory and a long-term memory. We use our short-term memory to store new information and our long-term memory to store and keep information for future use. With age, our short-term memory skills diminish. Many elderly people remember perfectly who lived in the same street with them when they were young but they keep forgetting the name of the new arrival at the care home.

Combining memory skills

Memory skills (verbal and non-verbal and short-term and long-term) can be combined. We not only have a long-term and a short-term memory for words and language but also for non-verbal information. Smells act very strongly on the memory and can cause a flood of memories. All you need is the slightest of whiffs of apple pie to remind you of the glory that was grandma's apple pie.

Linking new experiences to existing knowledge

Memory plays an important part in the recognition of objects. In order to recognise an object new tactual impressions have to be linked to tactual memories that have been stored already. The ability to make connections in this way and categorise them allows the child to make more sense of the world. It is also vital for conceptual understanding. The child learns to give his impressions a more abstract form: 'This mug is not just the objects I drink from. The thing my mother drinks from is

also called a mug. We also have mugs in school. A mug can have two handles or just one but some mugs have none and they are also called mugs'. In order to categorise objects, for instance into the 'mug category', it is important to recognise and store the characteristics of mugs (you can drink from them, they don't come with a saucer, they are usually bigger than a teacup and they come with and without handles). In short, (tactual) memory plays a major part in the division of objects into categories. It is a division which makes the world more orderly and easier to understand.

Spatial memory

Apart from the memory types we have mentioned, there is also 'spatial memory', specifically dedicated to the storage of information about spatial positions. By crawling his way through the sitting room, a child learns where the chairs are, and the play mat. Initially all the objects the child encounters are new but after a while he will start to recognise them and remember which object is where in the house. That is why it is so important to keep your chairs and tables and other objects in a fixed spot: their positions function as handy aide-memoires. As time goes by, the child's world will grow bigger and bigger and also include the positions of fixed objects outside the house. The child learns that the wall near the school leads to a path which it has to cross to get to the swings. Spatial memory makes the child more mobile and independent. A child that is able to learn routes and memorise them is less dependent on others.
Spatial memory is not only about knowing where things are in a big space but also works on a smaller scale. Braille letters, for instance, consist of dots placed in a number of different configurations. If dots one and two are placed vertically we know it is the letter b. And if there are two dots next to each other on the first and fourth positions, we are dealing with the letter c.

3.7 Motor skills

As a parent you want your child to be able to move through the world with confidence. It is lovely to see how energetically children try to master motor skills: 'Look mum, I can hop on my left leg as well as on my right! Children are always watching what other children are doing and then imitating them: they are constantly trying out and learning new things.

Learning new skills

It is not always easy for visually impaired children to learn new motor skills. They can't see what the other children are doing and are unable to check their own movements with their eyes. Sometimes it is almost as if blind children are 'locked up' in their own body. You can't simply make a dash for something if you do not know whether there is an obstacle in the way or not. One of the consequences of this is that blind children will 'stay put' when they are jumping. Even their feet (toes) do not leave the ground.

Blind children need movement experiences in order to acquire good spatial and orientation skills. That is why motor skills are practiced intensively during early intervention coaching sessions and in school. One of the things the child learns is to use the midline (the vertical axis which runs through the body) for orientation.
In this way the child learns it has two equal body halves. Often the child will develop a preference for either the left or the right body half.
One of the most important motor skills is the ability to make independent movements with each body part, such as stretching one arm and bending the other at the same time. Games in which the child has to imitate someone else's body position stimulate body awareness.
Gradually the child will learn about its body in relation with the space around it: 'Is my head nearer to the floor when I'm standing up or when I'm sitting down?, or: 'If I am facing someone and the voice of that person comes from above, that person must be taller than me.'

Circusact

Games to promote motor skills

Lap games are a good way of stimulating motor skills in very young children. These can involve moving the child gently 'forwards' and 'backwards'. With his body the child feels the body of the adult move nearer or farther away. And when it tumbles all the way backwards, its hands can touch the ground. Through play the child learns a great deal about his body in relation to other people and the environment.
Make sure the child feels safe when you do this type of movement experience activities: start by using your hands to hold the child, then use a safe surface, like a mattress or a thick mat.
In this way the child will be able to move freely and practice absorbing the shock of falling down without fear of hurting itself.
There are some good ideas for movement

experiences with (young) children on Veronica Sherborne's website (see paragraph 15.1)

Two-handedness

Two-handedness is an important motor skill. If it is sufficiently developed, the two hands work together equally. Some actions require a certain 'division of roles' between the two hands. In order to pour a glass of milk, for instance, one hand takes on the fixating role of holding the glass and the other the dynamic role of doing the pouring. Practicing the correct cooperation between the hands is particularly important for blind children. Just to achieve a good speed when reading Braille requires the use of two hands. In order to get a good impression of an object that can only be held in one hand, this cooperation is crucial.

3.8 Tactual areas

The fact that blind people always use both hands when reading often leads people to think that the fingertips are the most important areas of the body with which to perceive touch. Reading, however, is not the only activity for which touch is used. In order to gain information about the world, blind people use many more areas of the body than just the fingertips.

The fingertips

The fingertips are used to distinguish fine detail (fine perception). Our fingertips have densely packed touch receptors and nerve endings and are very sensitive. In most people the index finger is the most sensitive for cutaneous perception purposes (see chapter 1 for information about cutaneous and proprioceptive touch) but in some it is the middle finger. Fingertips are important information channels and you must take care not to let them get damaged by injections or intravenous drips.

The hands

The hands are used to find out about the size, material, shape and surface structure of medium-sized objects. Check if the child enjoys exploring sensopathic materials, such as sand or shaving cream. If the child dislikes the feel of these materials try to avoid the material and hyper-extend his fingers. This can be a sign of tactile defensiveness (see paragraph 1.5).

The feet

The feet constitute another important area of the body used for touch. The soles of the feet provide information about surface structures which the child can use for orientation: 'I can feel the ribbed surface of the carpet. That means I'm back in the living room'. Of course, blind children also use their hearing to find out where they are but in this book we concentrate on touch.

The mouth

The first act of 'enclosing objects' (a dummy, a nipple or a finger) takes place using the mouth. The mouth and the surrounding area are highly sensitive, and sometimes even over-sensitive.

Hand-mouth cooperation plays an important part in the development of motor skills. Blind children lack the visual stimuli which would initiate this interaction and they sometimes need extra stimulation.

The head

Not many people would think of the head as an area of the body particularly suited to tactual exploration but for very young children in particular it is an important source of tactual information. They press an object against the face (often the cheek or the mouth) or they explore it with their forehead. Babies and toddlers also use these areas when they explore a space: they will sometimes feel the soft fabric of the sofa with their cheeks. The mouth and lips are often used for a more specific exploration of materials.

The whole body

In addition to using smaller parts of the body to explore with, the child can also use its entire body. Lying stretched out on a mattress is one way of gathering information with the whole body, as are moving the body in the swimming pool or along a wall. This type of exploration can also give rise to tactile defensiveness. Sometimes children do not like to lie on a soft surface. If you detect this in your child we advise you to take this up with the early intervention coach.
Vibrations are also felt with the body. You only have to think of the moment when the train thunders past while you wait behind the barriers. Deep heavy bass tones in music can also be felt throughout the body. Some children love to lean against a big drum, preferably with their head or ear pressed against the drumhead. It is not just the sound of the drum that is enjoyable but the accompanying vibrations as well. One girl at the Visio school liked nothing better than to drape herself over the washing machine to feel the vibrations, especially when it hit the spin cycle.

3.9 Tactual experience

Tactual history

A child's 'tactual history' has a big impact on tactual perception. Tactual perception is determined by the number of tactual experiences and whether or not the child suffers from tactile defensiveness. A tactual history also includes the timeline of the child becoming blind. There is a significant difference between children who have never been able to see and children who have become blind at a later age, especially if they have retained some visual memories.
The child's attitude towards tactual exploration depends on how positive or negative his tactual experiences have been. An unpleasant tactual experience, such as running into a cactus while exploring the window sill, can cause tactile resistance or even a fear of touching. As a result, the child will be reluctant to explore all the cupboards and shelves in an unfamiliar room.
A child whose tactual experiences have been

predominantly positive because it has come across lots of interesting objects, will be much more inclined to explore spontaneously. This will result in more and new experiences, which will be linked to what knowledge the child already has and which is needed to form a comprehensive image of the environment (see chapter 2).

One object, many experiences

Young blind children often reject new play material. It takes several tries before they are ready to accept a new toy and familiarise themselves with it. It is important to persevere but it is equally important to keep adding new dimensions to an object. The more tactual experiences the child has with individual objects, people and products, the more comprehensive his understanding of them will be. An apple, for instance, is usually peeled and cut into small pieces to make it easier for the child to eat. This is how he learns that these little pieces are called 'apple'. However, feeling the whole apple, or even the apple tree, will increase his knowledge of the concept enormously. By exploring more than one variety, the child also discovers differences in texture – some apple skins are much smoother than others – and aroma. Peeling the apple will give the child new information about the skin and the shape of the apple. Cutting it in half produces other tactual sensations while also revealing the core of the apple with its interesting little pips. This example shows that one simple object can generate many different tactual experiences. A child that has experienced all these actions and sensations will have a much better understanding of what an apple is than one whose experience has been restricted to manipulating apple segments in a bowl.

The role of the parent

The kind of touch strategy a child employs is often indicative of the experiences he already has. If you say: 'I have a whole water melon for you here', a child who has previous knowledge of what a water melon is like will fling its arms wide open. It knows a watermelon is big and heavy. A child unfamiliar with water melons may hold out one hand, expecting it to be no bigger than an orange.

As a parent, you have an important role to play: there is much you can do to help your child gain experience of many different things. You don't have to go on special excursions to do this. A trip to a street market is enough to introduce the child to the feel, smell and taste of fruit, vegetables and flowers. Stall holders will often have small containers of chopped fruit so you can sample the wares. Of course, the child can't explore everything that is around him. That would be far too tiring. What you can do is to introduce a new element with every visit. This will make the experience fun and your child will look forward to go market shopping with you again. At the same time, his store of knowledge will gradually increase.

Experiencing the function of an object

Children also have to learn what objects are

Discovering the function of a sand sifter

for and what they do. Young children start by experimenting with putting things in cupboards and containers and taking them out again for hours on end. Actions like opening cupboard doors and closing them again are repeated endlessly and practiced on different kinds of doors. Rolling a ball or turning the wheels of a toy car are also popular. As it experiments, the child finds out that not all objects can roll: it really has to be round for that.

In the photograph you can see some children at the sand table discovering the function of a sand sifter. They can feel the sand go through the holes with their hands.

3.10
Sequential perception

Exploring big objects requires good 'sequential perception' skills (the ability to explore an object bit by bit and assembling the pieces to form a meaningful whole). The same is not true for small objects which the child can enclose with his hands and explore at once and completely. Bigger objects, like maps or spaces, cannot be taken in at a glance and need to be explored one bit at the time. The resulting tactual impressions have to be put together to form a whole. To do this, the child needs good memory skills: all the individual pieces of information need to be remembered and then collated (also see paragraph 3.7). In order to assemble the tactual impressions correctly, the child has to put the information into the right order. If the child forgets part of the information, the mental image will not be complete. To answer a question like: 'Did the house in the drawing have a chimney?', that specific part of the tactile drawing must also have been carefully explored.

Information processing capacity

Not all children are able to retain and collate the same number of tactual impressions. The amount of information a child can retain and understand is called the 'information processing capacity'. The brain's processing capacity usually grows with time. Exercises and training also increase processing capacity. When a child explores a map of the Netherlands for the first time, all the information is new to him. It will take time to memorise and recognise the exact shapes. After having explored it a dozen times, things will be much easier. When feeling the distinctive shape of the Wadden Islands, the child will know that he is exploring the northern region of the country. Using this position as a reference point, he can then explore the map in more detail.
This example shows that tactual impressions are linked to earlier experiences and existing knowledge. The process of reading Braille is another such example. Initially all the shapes are new and it takes a blind child quite a while to study the letters. Even reading short texts can be very taxing for the child's information processing capacity. As the child becomes more familiar with the letters, he will recognise and read the words more quickly. His reading speed will improve and soon he will be able to read much longer texts.

Perceptual speed

The speed with which a series of tactual impressions are being perceived greatly influences how this information is received and interpreted. When tracing a line with your finger, you have to adapt your speed in order to feel the curve. If you are too slow, however, the change in direction will hardly register. The same goes for walking. Walk very slowly and you will not notice you are negotiating a bend. For the perception of detail the motto is: easy does it. If you take it slowly, your tactual impressions will be more accurate.

3.11 Tactual concept database

The 'tactual concept database' functions as a storage facility for information gathered through touch. The way in which this happens is influenced by the child's ability to process and understand this information. Every child has his own way of processing and storing new information, depending on knowledge, preferences, previous experiences, interests, intelligence and personality. In short, every child has his own individual way of grouping information into categories and turning it into meaningful knowledge.

The size of the tactual concept database

Not every blind child has the same amount of information in his concept database and, consequently, some databases are bigger than others. One way of making your child's tactual concept database grow is by stimulating him to look for tactual experiences, starting with the immediate environment. If your child is always sitting in his bouncy seat, he will learn things about the bouncy seat but not much about floor surfaces. If you take your child out of the seat and put him on the floor, he will soon find out that not all floor surfaces are the same: some are hard, others are soft; some are cold and others warm; and some are smooth and others hairy. Discovering these differences in floor surface and textures will make a big contribution to the child's database.

The child's personality also influences the size of his database. Some children are curious about their surroundings and are happy to explore without encouragement. Others are hesitant and prefer to stick to what they know, perhaps because of an unfortunate earlier experience. Some blind children simply can't bring themselves to explore for fear and lack of visual stimulation. A squeaky toy will make your child curious and encourage him to move towards the source of the sound. It often takes the close proximity of a parent to give the child the confidence to actually start moving, especially when they are very small. In short, you as a parent can encourage, invite and coach your child on his journeys of discovery. If the child does not explore spontaneously, you can 'bring the world to him'. In this way you make sure that the child experiences things he would not very easily discover for himself. This is especially important for children who have a motor disability as well.

The child's level of intelligence and information processing capacity also affect the amount of information stored in the database.

The experiences resulting from the exploration of an unknown object determines how this information is stored. Take a plant, for instance, or a bunch of flowers. A plant's pointy leaves pricking his skin unexpectedly may give the child a fright and the event will be stored as an unpleasant experience. If the child knows about the plant beforehand, he will not be as

Exploring the plant

unpleasantly surprised on encountering it. And if he then, with the aid of his mum or dad, starts to explore the buds and the flowers of the plant, he will feel very differently about it and the experience will be stored as a positive one. The child may even ask his parents when the buds will open and new flowers appear.

The quality of the tactual concept database

Not only is the size of each child's tactual concept database different, the quality varies as well. With every new piece of information about a certain concept (see chapter 2), the order and composition of the database changes. Concepts become more comprehensive and specific. This

quality improvement process is led by a number of factors. Memory, for instance, is important for finding earlier experiences which can be linked to new ones. The understanding and knowledge already present determine how new information is evaluated. Is the child able to make the link between details on an unknown object and the same details he has felt earlier on another object? If a child who has discovered that the sand in the sand sifter is disappearing through the holes can make the jump to the holes which makes the water disappear in the colander, his understanding of what the holes are for gains another layer.

More experiences make for a better quality database. With every different chair the child explores, his understanding of what a 'chair' is will grow. It is important therefore to present the child with as many variations of the same object as possible. Why not go into a furniture shop and explore the different kinds of chairs there? The child will soon discover that chairs come with and without armrests, and that they can be made of bamboo, wood and metal. They can be high or low chairs and most have four legs although some have three. This kind of exploration stimulates conceptualisation and improves the quality of the information stored in the tactual concept database.

3.12 Visual database

Children who have become blind or severely visually impaired because of an illness, an accident or through a gradual loss of sight, often have quite an extensive 'visual database'. This database contains all the experiences and concepts the child stored when it could still see. It is important to form an understanding of how the child employs this visual database. Is the information still relevant, for instance, and when did the experiences take place? Does the child still use the information stored in the visual database to 'visualise' new tactual experiences?

Visualisation

By the term 'visualisation' we mean our tendency to translate everything we feel into visual images. If you close your eyes and explore a perforator with your fingers, chances are that a picture of the perforator will pop up in your head. It is not only sighted people who do this. Children who are losing their sight and having to switch from sight to touch also do it. For them, touch alone is not enough to understand the information. Their tactual concept database is still too small. They will fall back on their trusted visual database which has a much bigger store of impressions. They know what a perforator looks like and will recognize this object when they touch it: the tactual impression is translated into the visual image.

Making the transition to touch

Many children find it difficult to abandon sight for the largely unknown and untried sense of touch. They do not know to what extent they

can trust the information coming in via this channel. This is especially true for children whose sight diminishes gradually because of a progressive condition. Even when the field of vision has become quite limited and visual acuity is reduced, these children will still use their sight to check whether the tactual info is correct. It is important that you as a parent monitor the transition from one sense to another, and do nothing to force it. Forcing a child to stop using his sight in favour of touch, will cause resistance. This is understandable enough: he is venturing into unknown territory and that can be a frightening experience. The information coming in through the new information channel (touch) may not be reliable and not using sight means a loss of control. Some children fear that by using touch they will lose what little sight they have left.

It sometimes happens that, due to an accident or serious illness, the transition from sight to touch is immediate. This is a huge emotional blow for a child to deal with. This has to be taken into account during the tactual training sessions. The child will have a well-filled visual database to fall back on in the initial stages. Most children are happy to use it. Moreover, the visual database will help them understand any new information that comes in through touch.

The combined use of the visual database and touch

There is a group of severely visually impaired children whose loss of acuity means they have to use Braille. They are still able to use sight for other types of information, however. Contour perception or colour perception can help with orientation or the recognition of an object or person. Apart from the smell and shape of an orange, its colour is a useful extra piece of information. It is always important to stimulate what remaining sight a child has as well as the tactual skills.

4 Introduction

This section of the book is dedicated to ideas and materials for tactile games that you and your child can play together.
The games have been categorised according to the categories used in Tactual Profile, an observation instrument for assessing tactual perception and functioning. Most rehabilitation centres and schools for children with a visual impairment in the Netherlands and Flanders already use this tool and its English version is gaining in popularity all over the world.

Tactual Profile distinguishes four main categories:

- Tactual Sensory functioning
- Tactual Motor functioning
- Tactual Perceptual functioning
- Practical skills

For the sake of clarity we have re-named the first three categories:

- Tactual Sensory functioning: Touch and perception
- Tactual Motor functioning: Touch and movement
- Tactual Perceptual functioning: Touch and understanding

Touch and perception

The tactual skills in this category are related to incidental and passive perception. The child does not have to attach meaning to what he is feeling yet. The games in this category are meant to evoke exploration. The child learns more about his body and becomes aware of how big or small he is compared to his surroundings. The games also stimulate the development of fine motor skills.

Touch and movement

This category is about movement skills and contains a number of active games which stimulate motor ability.
The first step is to challenge your child to explore independently. We have included a number of ways in which you can encourage your child to set off on such a journey of discovery.
We then suggest some games which stimulate either gross or fine motor skills. These include a large number of exercises which promote two-handedness.

Touch and understanding

This category relates to the important skill of understanding the information the child receives through touch. This skill, which becomes increasingly important as the child grows older, is trained in school but there are many activities that you can do at home as well. The tactile games you will find in this category will help develop your child's spatial skills, for instance.

Practical skills

These are the practical, every-day-life skills which are based on the skills described in the other main categories. Here you will find activities which will improve your child's self-help skills, or board games which your child can play with other, sighted children. This category is quite an extensive one because the games described in

it are ideally suited to the home environment in which you can play a major part.

The games in this book fall into the one of the four main categories. These in turn are divided into subcategories, in line with Tactual Profile. This division is used because this instrument is used to assess tactual skills in blind children throughout the Netherlands and Flanders. For more information about Tactual Profile you can visit **www.tactualprofile.org**. The site also contains video material which shows how this observation instrument is used.

Tactual Profile box

Age categories

The tactile games have been roughly divided according to the following age categories:

- Baby
- BabyToddler/Pre-school age
- Primary school age
- Adolescent

We have not described a great number of activities for adolescents. We occasionally include an activity for them but the main emphasis is on games for children up to the age of around twelve.

Developmental stages

The exercises and suggestions described in this part of the book not only relate to the child's age but also to the developmental stage he is in. Not every child is a 'natural explorer'. Some children will remain reticent and need more stimuli. You may decide not to pay too much attention to the child's practical skills at home: your child already works very hard in school and the effort to keep up with the tempo is energy consuming enough as it is, especially if he goes to a school with sighted children. You may not want to ask your child to pour his own milk or butter his own bread when he comes home after a tiring day at school. In that case, you can practice the skills described for slightly younger children at a later stage.

Playing, not training

It is not our intention that you create a training setting at home in which you set about practicing

tactual skills with your child. That is the job of early intervention coaches, occupational therapists and teachers. What we want to achieve is that you stimulate your child's tactual skills in a playful manner. Touch is, after all, the most important channel of information your child possesses. As you read these suggestions you may well find that you are already doing many activities in the way we describe. Not all of the suggestions will be new to you but we still hope this practical guide will inspire you.

General tips

Before you start browsing, here are some general tips:

- Try to encourage your child to start exploring. You can make your child curious about what is happening around him by making things happen. Sound is one way of getting your child's attention. Once your child likes a game or activity, he will want to find out more. That is why it is extremely important that you find out what your child likes and what would make him want to explore his surroundings.
- Use toys that make a sound by all means, but also experiment with other types of toys. Sometimes children become too focused on sound and neglect their tactual skills. Strange and exciting surface structures make exploring fun.
- Apart from exploring objects, children also derive pleasure from hearing sounds they can produce with them, for instance ticking the long cane against the school gate or banging the bin to see if it's empty or not.
- Children who have some vision left should be encouraged to use it as well as their sense of touch. Some children can distinguish contour, others see colour or movement. We advise you to choose your toys accordingly. Buy colourful toys for children who can still see colour so they can locate them more easily. Children who still see contours and outlines will benefit from pictures drawn in thick, raised lines. In this way they receive visual and tactual information at the same time. Some visually impaired children have limited acuity and are unable to read print but can see pictures. This will stand them in good stead during geography, biology or maths classes when they are a little older.
  Movement and contour distinction are helpful for orientation. It is important to find out exactly how much your child is still able to see so residual vision can be used in the appropriate setting. Dangerous situations must be avoided, of course! An orientation and mobility trainer can help to observe and assess whether or not the child's vision is sufficient to use for orientation purposes.
- Structure, a daily schedule and a fixed place for everything are good for children in general and even more so for children with a severe visual impairment.
- When introducing a (very young) child to a new toy or object, you have to offer it not just once but many times. Repetition will make the child recognise the toy and become familiar with it. However, at some point you must vary the range of toys. If not, the child might become stuck

in certain patterns. Some blind children have a tendency to 'lock themselves in a pattern'. Doing the same thing again and again is predictable and children love predictability. It is not the way to experience new things, however, and repetitive behaviour should be discouraged.

- Accompany each new toy with a running commentary: tell the child what it does and what is going to happen next. Sighted children are much better at anticipating events. When they see a big cake being brought to the table they start clearing a space for it. At the sight of the cake they start screaming or singing enthusiastically. The link between the cake and the children's screaming or singing is lost on a blind child. Announcing what is happening and describing the objects in question help a blind child to join in. Sensations can be described too. The sole of a shoe may feel 'lumpy' and the table can have a small 'dent'. In this way the child learns to name what it feels. This kind of language is called 'tactual language'. Paragraph 7.9 describes a number of activities involving tactual language.
- The activities in this part of the book are not meant as an 'extra'. It is much better to integrate them into your daily routine. A visit to a garden centre will offer plenty of opportunities for exploring without turning it into a training session. It is just that blind children need more explanation and need to be brought into contact with normal, every day experiences a little more explicitly.
- Expertise centres for the blind often have toys you can borrow. Your child's early intervention coach or occupational therapist can advise you on the suitability of the toys.
- The suggestions in this book are only a start. By using your own imagination and creativity, you can adapt a game so your child can play it with his friend from next door. This takes time and energy and we understand that it cannot always be done. But should you feel inspired, there are any number of games that can be adapted using felt stickers, tactile stickers, glue or pasta. Sometimes the design of a game - Twister in this case - is changed completely, as you can see in the photograph below.

Things to look out for

- Does your child have specific preferences? Have you noticed a preference for a certain type of fabric, for instance? Does he prefer to wear

Twister

clothes made of supple fabrics or does it not make any difference? Does he like hard or soft materials?

- Does your child explore without encouragement or do you have to bring the objects to him? If your child continues to be unwilling to move, try to encourage him by placing his favourite toy nearby. The child's independent discovery of it will elicit a positive response and bring about further exploration.
- Pay close attention to the child's responses. Was the experience fun, scary or exciting? Does he want to repeat the experience or not at all? If your child is really frightened by something he touched you must not force him to repeat the action. This reaction is not uncommon in children when confronted with a new toy. The child needs time to familiarise himself with it, so leave it for another time.
- Are you observing a certain reluctance when it comes to touching materials and people? If you do, speak to your child's early intervention coach, occupational therapist or teacher. You can find more information on the subject in paragraph 1.5 'Responses to stimuli'.

5 Touch and perception

5.1 Tactual awareness

Tactual awareness means that the child perceives things through touch and shows it. Think about your child's responses when he is being cuddled or lying comfortably on a mat or towel.
Safety and physical contact are vital during the first stage of the child's development.
They enable the child to understand that his own body as well as things and other persons are tangible. Physical contact takes place during (breast) feeding and when you wash and dry off your child at bath time. These daily care moments offer plenty of opportunity for playing games, like touching, cuddling, tickling and massaging. You can include movement games, like bringing your child's hands to his mouth or moving his hands or feet towards each other. Describe your actions as you perform them or sing an appropriate song.

Sitting on mummy's lap

Moving together

A baby in a baby carrier can feel his parent's nearness as they move together. Blind babies do not tend to move very much and being carried is a good way of gaining movement experience.
Make sure your child is comfortable and secure. Change posture gently so your child can adapt to the movement. Try to avoid sudden movements which might frighten your child and make him feel less secure. If your child shows signs of being uncomfortable, try holding him a little tighter.

Different surfaces

Put your baby in different positions on a mat. Babies like an enclosed space, so use cushions, a play ring or a playpen to increase the child's sense of safety. You can also vary the surface the baby is lying on to increase his experience of different textures. You can use a towel, a sheepskin, a blanket or a play mat.
Clothes, too, give tactual input: a soft cardigan, a corduroy pair of trousers, a smooth coat, a blanket that is tucked in all around.

Playpen mat

It is good for your baby's development to put him on his stomach every now and again. As visually impaired children do not always like this, you can try putting the baby on your chest or across your legs. Your physical nearness will make him feel safe. Also tell your baby what you are going to do. Your voice will reassure him and your baby will learn what to expect.

Be alert for signs of discomfort when you try the different surfaces. The child may be startled and freeze, or squeeze his hands into fists. These are indications that the child is not happy.

5.2 Noticing

Before a child can start to recognise the people and objects in his environment, he must first notice them. There is plenty to notice, like people, animals and things. Objects may have particular and interesting characteristics, such as:

- Moving or revolving parts
- Familiar objects with changed or missing parts, like a cup without a handle, or a comb with a few of its teeth missing
- Changing surfaces
- Some objects make a sound when you touch it. This helps to establish a link between hearing and touch.

The more the child notices and explores objects, the easier it will become to recognise them. It is much more gratifying to find things than having them simply 'disappear', so limit the child's exploration space by using cushions or a play ring. You can also put or hang the toy within arm's reach. Your child does not only discover things with his hands; he uses his feet and mouth for noticing as well.

Your child's responses will tell you whether or not he is enjoying his tactual experiences. If not, you can substitute one material for another, or change the child's body position. He may feel more comfortable on his back or stomach, in your lap or in a bouncy seat. And perhaps he feels safer exploring all those new things with his mummy and daddy.

Baby and toddler

Nearly everything in your environment can be used to stimulate your child's awareness of things. Always choose something that is

Play arch with scarves and toys

Toys with different textures

interesting to the touch, such as objects with different textures, bits that stick out or moveable parts. Activity centres are good for this and so are toys with different tactual surfaces (ribbed, lumpy, smooth, hairy, with and without sound). If you and your child take an object, like a rattle, to produce sound together, the child will discover that he is able to do this independently as well.

You make good discovery material, too. Invite your child to explore your face, hands etc. Maybe your clothes have an interesting feature, or perhaps you have a beard or wear glasses or a watch. Pulling faces and making funny noises while the child is exploring will turn the discovery of you into a great game.

Ideas

Every household has kitchen cupboards full of material waiting to be explored: cups and bowls, wooden, plastic or metal spoons, all kinds of brushes, a whisk. Household objects with moveable parts, such as a container with a hinged lid or an old fashioned coffee grinder are fun to explore. Perhaps your child will discover the action himself but you can also try it together first.

The floor inside the house and the outside surfaces offer numerous tactual experiences. Every house has a number of different floor surfaces which can be explored with the hands or the (bare) feet. Is your child aware of thresholds? Floor surfaces promote orientation because the texture of each one will tell him where he is. Recognising floor surfaces is an important part of mobility training.

Outside spaces, like gardens and forests, also offer plenty of opportunities for exploration. There's grass, sand, moss, pebbles, autumn leaves, sticks, flowers and much more.

5.3
Body awareness

Body awareness forms the basis for purposeful movement. We need it in order to control our body parts and move safely through a space. Body awareness means you know what your body is doing. In order to learn to type, for instance, you need to know exactly what each finger is doing. If you want to climb a flight of stairs, you need to know what your legs are up to.
A child learns about his own body parts, what they are called and where they are. Later he will compare his body to other people's bodies.
Body awareness also promotes self awareness, or the sense of being a separate person.

Baby and toddler

Movement games are great for stimulating your child's body awareness. Name the body parts during the daily care moments and rub or tickle them a little to make the child notice them more. Baby and child massage is a good way of stimulating body awareness.
Most children love to sing and move about with another person. There are lots of songs which involve movement or touching body parts, for instance 'These are my little cheeks' or 'If you're happy and you know it (clap your hands)'.
Pointing out body parts on another person or a doll is a little more complicated.
If you put a little bracelet or sock with a small bell attached on your child's wrist or foot, the sound will make him notice where his hands or feet are. He will become aware of their position and will start to reach for them.

Pre-school and primary school age

There are many moments in a day when you can ask your child to look at his body in relationship to your own, or someone else's. Putting on your shoes can lead to interesting comparisons of foot size, for instance, and putting on gloves will do the same for hands.
By standing next to each other you can measure who has the longest, fattest, thinnest arms. You can also measure who is taller. And what happens when one person squats down or climbs on top of a chair? Who's the tallest then? How many steps up the ladder do you need to be as tall as daddy?
Your child can compare his own fingers: which is the longest, shortest, fattest, thinnest? He can also compare different body parts: which is bigger, my hand or my head? Which is longer, my arm or my leg?

A height chart on the wall with tactile markers will register every family member's growth. How tall was everybody a couple of years ago? How tall were you when you were a toddler? Children and parents alike will enjoy following the changes over time. When playing at statues, the child must be very aware of posture: as one child stands stock still like a statue, another child explores and imitates the pose.

Rugs, sheets, curtains and bits of fabric offer endless opportunities for play. A piece of fabric

can become anything in the imagination of a child, from a tent to a flying carpet or a princess dress. As a parent you are very welcome to join in this game of make-believe. Meanwhile your child is learning things like:

- Which of the two pieces of fabric is bigger?
- Which pieces of fabric are bigger than I am?
- Can I stand or sit underneath them?
- Is it easy to walk covered in a sheet?

You can help by doing movement games, like dragging your child around the room on a rug but you can also see if he enjoys being rolled up in a carpet and then free himself. If this is too stressful, you could start by just wrapping up his arms or legs in a piece of fabric.
Rough-and-tumble games are a good way of acquiring body awareness. Your child experiences your strength and has to try his own as well. That is not always easy.

5.4 Touch sensitivity

By exploring with his hands, feet or mouth your child gathers information about the properties of an object: is it smooth, rough, hard, soft, cold, warm, hairy etc?
The fingertips and the lips are exceptionally sensitive areas because they are tightly packed with receptors and nerve endings. The palm and the back of the hand are sensitive as well. Blind babies and toddlers usually rely on what their mouth can tell them for a bit longer than sighted children. The combination hands/mouth is a good

Statue game

A child being dragged on a rug

way of gathering a lot of information at the same time.
Touch sensitivity enables children to perceive detailed information about their surroundings. Using both hands at the same time is the most effective way of exploring because larger surfaces can be explored and comparisons made. Babies start exploring from an early age and as they add to their store of tactual experiences, their touch sensitivity develops as well. Because blind children depend on their sense of touch they not only need to learn to use it to its best advantage but also explore through touch as much as possible. A blind child needs to experience different tactual surfaces but also needs to explore them repeatedly in order to be able to remember them. Always give your child plenty of time to explore an object or material fully.

Baby, toddler and pre-school age

Many every day objects offer plenty of scope for tactual experiences. Your clothes, for instance. The child will come into contact with what you are wearing every time he sits on your lap. Zips, a scarf, embroidery or a necklace are some of the features which will make things more interesting for your child. Choose your child's clothes with a variety of tactual experiences in mind. Different textures, tassels or a raised print all contribute to the tactual database of your child.
Encourage your child to discover the feel of different materials and stimulate him to search and explore objects by himself. Some children are not very happy to do this but can sometimes be persuaded if you help them along, for instance by singing a song.
If your child is mobile and moves around the sitting room, he will come into contact with furniture. There is plenty to discover about furniture. It is made of different materials and has all sorts of details to explore: upholstery fabric, buttons, seams and ridges that can be traced with the fingers. Do not forget to

familiarise your child with the 'dangerous' things in the sitting room, like the sharp corner of a table.
If your child is not keen to go exploring on his own, you can accompany him and explain the objects to him. Your enthusiasm may work as an incentive. Start with the pieces of furniture the child is most likely to come across. These will become useful orientation reference points.
Many of the toys available for babies and toddlers offer different tactual experiences in the way of lumps and bumps, ridges and textured fabrics.
Take toddlers and pre-schoolers (and primary school age children, of course) out into the garden or to the beach to collect materials from nature, like leaves, shells, pine cones, acorns, stones, snail shells, pumpkins etc.

All these represent a great range of tactual experiences although they are not very good for children who are still using their mouth to explore. Use containers or a tray with high side walls to keep things from rolling beyond reach.
The kitchen cupboard also contains lots of materials to stimulate tactual sensitivity. Children like to mess around with uncooked rice, pasta shapes or beans in a container. Not only does it feel nice, it sounds nice, too.

Pre-school and primary school age

Most children like to help around the kitchen when their mum or dad is cooking, or baking a cake. Food offers a range of tactual experiences. There is a great deal of difference between food

Nature material

in its uncooked state and the food that ends up on the plate, so make sure you let your child feel what it is like before it goes into the pan.
For instance: rice in the package, uncooked rice and cooked rice; cabbage, sliced cabbage and boiled cabbage; unpeeled potatoes, peeled potatoes and boiled potatoes. Your greengrocer sells all sorts of different kinds of fruit and vegetables. You can let your child explore these while you name them. Some vegetables feel similar, like broccoli and cauliflower: explore them together and try to describe the differences.

When you are making pizza, biscuits or meatballs, ask your child to knead the ingredients together. All the individual ingredients feel different and once they are all mixed together they will

feel different again. Most children like this sort of job but if your child suffers from tactile defensiveness he will probably not enjoy getting his hands into a sticky mess.

There is lots to explore in and around the house. There are things that may not strike you as interesting because you use them all the time but which your child will never have touched, like a light switch for instance. There are other objects that you may not even notice but which your child will find very interesting to explore because of its tactual or auditory effects. The gate that goes rat-tat-tat when he trails his cane along is sure to hold his attention for a while. Encouraging your child to explore the nooks and corners of his environment not only promotes tactual sensitivity but orientation skills as well.
Your child usually explores by using his hands but he can also explore with his (bare) feet or a long cane if he has one.

As he explores the surfaces around the house, your child will discover where one kind of surface ends and another begins. He will notice the transition from the wall to the carpet, from the window frame to the glass pane and from the door frame to the door. The soles of his feet will tell him about the different floor surfaces in and around the house. Often the child likes to double check these sensations with his hands. In this way he will experience the meaning of concepts like soft, hard, stiff, smooth, sharp, rough, ridged etc. You can help by naming the different surface textures so the child can make the connection between the experience to a word.
Your child will turn into a real detective when he starts looking for details, independently or when given an 'assignment' by you. 'Where is the hinge, the hole in the door frame for the lock, the letter box, the window handle? Have you ever come across this before? What is it used for?'

Outside, a whole new world will open up for your child. Together you can investigate the different kinds of paving and ground surfaces. At a later stage your child can use a cane with which to scrape or roll over the surfaces. The street is full

Trailing the gate with a cane

of details: the edge of the pavement, manhole covers, bevelled pavements, lampposts, gutters and the joints between tiles.
This kind of detail is often first noticed with the feet or a cane but children also like to do a manual check to be sure.

5.5 Proprioception

The muscles, tendons and joints in our body tell us where we are in space. We also know where our body parts are in relation to each other and what they are doing. This form of perception is called proprioception.

Another name for proprioception is deep pressure. The body needs to be kept upright with every movement or change of posture. It has to be in balance all the time. The estimation of the strength needed to grab, pick up and move an object is also a form of proprioception, as is the perception and memorisation of the direction of a movement. All this children learn by moving about.

Children with a severe visual impairment are much less inclined to move about without encouragement than sighted children. Touch, however, requires the ability to sustain a certain body position and control the amount of muscle contraction in the arms and hands. In order to achieve this, the child needs good proprioceptive skills. Extra stimuli are often necessary.

Baby and toddler
Games that can be played with the child sitting on your lap, are a safe and playful way of experiencing balance. 'This is the way the ladies ride' or 'Coo coo clock' are good for moving

Keeping your balance on a balance board

together and involve a range of movements, from left to right and from back to front etc. If your child enjoys these games you can gradually increase the tempo:

This is the way the ladies ride
Tri, tre, tre, tree
Tri, tre, tre, tree!
This is the way the ladies ride:
Tri, tre, tre, tree, tri-tre-tre-tree!

This is the gentlemen ride
Gallop-a-trot
Gallop- a-trot!
This is the way the gentlemen ride:
Gallop-a-gallop-a-trot!

This is the way the farmers ride
Hobbeldy-hoy
Hobbeldy-hoy!
This is the way the famers ride:
And down into a ditch!

You can also place your child in different positions so he will undergo different body experiences. You can use an airbed, a rocking horse or a small rocking chair, which also promotes balance. You can also put your child on a mat and do movement and rolling-over games. Using a baby swing or a slightly bigger swing for your toddler is another way of letting your child experience movement. You can also sit on a swing yourself with the child on your lap. Sing a song to accompany the movement.

Pre-school and primary school age

Rough-and-tumble games
Rough-and-tumble games teach your child about his body and his muscular strength. Use a mat, the bed or your lap so your child will not hurt himself. Pushing each other over and trying to remain seated or standing are great games to do on a big mattress or a double airbed.

Lifting and carrying
Another good way of promoting proprioceptive skills is to lift and carry buckets filled with sand, heavy or light bags of shopping, cherry pit bags, a small chair, etc. By lifting and carrying different objects the child experiences different weights. Building with big blocks and scooping up sand with a spade do the same.
Pushing a wheelbarrow, a pram or a pushcart is quite a big effort for a child. To prevent the cart from running away or falling over, you can load it up with a few building blocks or phonebooks.

Pouring
In order to pour a liquid or twist open a bottle you have to use an exact measure of strength.
Bath time offers a good opportunity to practice this in a playful manner, using water and containers. You can also use sand shapes and spades and practice in the sand pit. The child can pour lemonade from a toy teapot. Encourage your child to eat with a spoon. This will promote deep pressure. There are challenging activities to train all the muscles for every age level.

The playground offers plenty of opportunities to practice movement and balance skills, like walking over a rope bridge, sliding down a slide, hanging from a zip wire, climbing on a climbing frame, bouncing on a spring bouncer, sliding down a fireman's pole, hanging from the rings, turning somersaults on a bar, lying or sitting on a cart and riding back and forth.
For real daredevils, there are the big trampolines at the amusement park. You can buy trampolines with supports for young children. Consult the internet or ask your child's early intervention coach for suppliers.

Other suggestions are:

- Skippy ball
- Balance board for two feet; Big balance board
- Hopscotch
- Arm wrestling
- Judo
- Swimming
- Skipping
- Walking bobbins or tins on a rope
- Circus gamese

A trampoline with a support bar: safety first

Playing circus games together

6 Touch and movement

6.1 Tactual exploration

Babies and toddlers use touch from an early age to explore the world and start moving.
To do this they use the mouth, hands and feet. Tactual exploration remains important after the baby and toddler stage. Older children, too, will still explore their environment in this manner. Curiosity is key at any age. If your child is not inclined to move and investigate spontaneously, you can help by bringing the world to him.
This may pique his curiosity and make him want to venture out after all. There are some things in and around the house which a child will not come across unless he is brought into contact with them: the ceiling, the mirror above the wash basin, a painting on the wall, high branches on a tree. These objects also form part of his environment and he will need your help, and the help of other adults, to become acquainted with them.

Baby and toddler

There are many things that can make your child want to investigate. A mat with lots of different fabrics and ribbons, a squeaky toy or the smooth surface of a small mirror. Music boxes and other sound-producing toys can also encourage your child to explore.

You can buy tactile books with different materials and sound effects, or make them yourself.

Instead of toys, you can also put household objects in your child's play pen or hang them on the sides, such as plastic cups, brushes, a ladle, a shampoo bottle filled with dried peas (make sure the top is taped securely to the bottle) or rolled-up socks. This will encourage your child to hit or grab them. Toddlers can also be let loose among the shoes and boots in the corridor.
There is the difference in size to discover, and the details on the shoes, like velcro fastenings, or a buckle. Encourage your child to try on mummy's or daddy's shoe. By comparing feet and shoes,

Tactile books

the child will start to understand the differences in size.
Getting to know the furniture also forms part of tactual exploration. You can help by letting the child come into contact with the furniture by rolling or shoving him gently towards it, or by walking up to a piece of furniture together. Encourage your child to stretch out his arms as you walk past a chair or table so he can discover the size of the object. Open cupboard doors and let your child explore the inside. It can be a bit complicated to sort out which objects the child may or may not touch but as a general rule it is better for the child to know where everything is so he can make a 'picture' of the environment. The garden also offers plenty of tactual exploration opportunities: trees, a hedge, a gate, paths, flowers, pebbles, animals etc. Perhaps there is even a vegetable patch to explore.

Try to make the child's environment as attractive as possible. Some children like a lot of variation while others like an ordered, predictable environment. If your child shows no inclination to discover the world around him, try to challenge him by rolling an object up against him, or making a sound with a toy within arm's reach or just a little farther away so he will move in your direction.
Songs also encourage movement and discovery. Comment on the things your child will encounter on his way: 'this carpet is nice and fluffy and it tickles'. This will make the environment less intimidating.

6.2 Manipulating

By manipulation we mean performing certain actions with an object. In order to manipulate all sorts of (household) objects, the child needs to learn how to make the hands and fingers work together. This is how fine motor skills develop.

Baby and toddler

Toys with moveable parts invite manipulation. There is a variety of activity centres and bead mazes on the market, from small and simple to big and complicated. These encourage tactual exploration ('What is this?') and manipulation ('What can I do with it?'). Small objects should be kept away from very young children. Apart from being dangerous in case of swallowing, small objects are not suitable because the fine motor skills are not sufficiently developed to explore them. What you can do is make a string of differently shaped beads, rings or buttons and attach it to the playpen or high chair.
Then your child can grab, rotate and move the objects safely.
Manipulation also includes: twisting off a screw top, tearing off bits of paper, pulling bits of clay off a ball of clay.

Pre-school and primary school age

Ironing beads come in different sizes. Use the big variety with young children. The child can put the beads on the mat willy-nilly to start with and in a slightly more structured way later on, for

instance by putting the beads along the edges or by filling out the top edge of the mat first. You can challenge your child to a contest: let's see who can make a row of beads the quickest. There are many different ironing bead patterns to choose from, such as hearts, animals and circles.

Beading
Beading is another activity that offers plenty of scope for variety. There are beads in all shapes and sizes and you can also vary the thickness of the thread. If you use a thick plastic thread you do not need to use a needle to thread big beads. Together you can make different necklaces, for a party or to give as a present.

Bead mazes

Ball rolling house

Clay
Clay is excellent for manipulating because the material changes shape all the time. Making animal shapes, like a snake, a snail or a cat's face, is great fun although working the clay can be a challenge for a blind child. Fingers and hands need to work together very well but with a little elbow grease and lots of imagination, something 'beastly' is sure to materialise.

Beading on fabric

Mosaic
All varieties of mosaic peg games and ministeck will help the development of fine motor skills. Use a tray with high side walls to prevent the pegs from falling on the floor.

6.3 Two-handedness

Using objects properly presupposes a good cooperation between the hands. Sometimes one hand is used to hold the object while the other is used to perform an action. In order to learn how to eat and drink, dress and undress independently, the child needs to use both hands. It is important to stimulate the use of both hands

through play, especially since the child will need two hands to learn how to read Braille.

Baby and toddler

Your child will need to use both hands when manipulating many everyday objects. Think of the two handles on the sippy cup that he learns to drink from. Velcro fastenings, snap-lock beads, snap buttons on clothing and Duplo building blocks are all fun to pull apart. Some may prove a bit of a challenge but you can help if things are too difficult.

Toddlers like play activities like twisting the tops off bottles, threading beads, making nuts and bolt constructions and building towers with big building blocks. A shape box promotes cooperation between the hands: one hand is used to locate the hole box while the other is used to put in the appropriate shape. When you help your child brush his teeth before bed, you can squeeze the tube together to make the toothpaste come out. Tip: It is much easier for blind children to put a little bit of toothpaste directly into the mouth in stead of putting it on a toothbrush first.

Snap-lock beads and velcro snake

Pre-school and primary school age

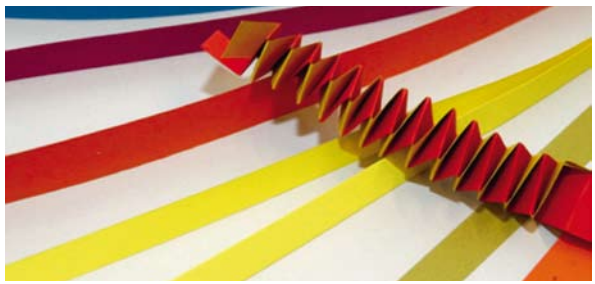
Making pom poms

Start with something easy, like winding a piece of string around a toilet roll. This will teach the child to make a winding motion, with one hand holding the roll and the other winding the string. Once that skill has been mastered you can go on to making real pom poms using round pieces of cardboard. There are plenty of websites and Youtube videos that can show you how to make pom poms.

For material promoting two-handedness go to **www.toys42hands.nl**

Making witches' ladders

Use two strips of paper to make a witches' ladder. Broad strips will make it easier to fold them over. Combining two different kinds of paper (smooth and ribbed, for example) will give a nice effect.



Witches' ladders

Making paper garlands
Making your own garlands for a party or celebration is a fun activity. Use paper strips of about 15 to 20 cm. The child can glue the ends together to form a ring. The next strip goes through the ring and is likewise glued together. In this way you can make your garland as long as you like.

Weaving
You can buy a child's loom but you can also make one yourself using a sturdy piece of A4 cardboard. Cut a series of slits on the upper and lower edge of the cardboard at 5 cm intervals. String the loom by stretching the warp yarn over the cardboard until the whole of the surface is covered. Your child can now weave a thread through the threads using a blunt needle.
He can use one hand to feel the threads and weave with the other. You can vary the thickness of the threads or use strips of fabric.
Tip: It can be difficult to distinguish between the threads. It may be a good idea to use two different kinds of yarn so the child knows which one to go over and which one to dip under.

Making snacks
Making snacks is a good and tasty way to use both hands. Putting cheese spread on crackers and wrapping up sausages in filo pastry are a few of many two-handed culinary exercises. Squeezing a tube or cake decorating bag is a good finger strengthening exercise. Finger strength is necessary for pushing the keys on the Braille typewriter.

6.4 Extrapersonal and peripersonal space

Every blind child has to experience and master exploring and moving in small or big spaces. He will start out by rolling, crawling or bum shuffling. When his sense of balance is developed enough to stand up, he will also walk through the space. If your child is reluctant to explore the space, you can do so together (carrying him in your arms, on your back or with the child standing on your feet). Your child's world will expand from the space that is very near (peripersonal) to a space that is further away (extrapersonal). He will not only experience concepts like height and depth but also speed, balance, strength and agility. The hands and feet and the whole body will start to work together. As your child grows, his world becomes bigger too.

Baby
A baby's nearby space means the presence of his parents, being safe and snug in their arms, on their lap or huddled against them in a baby carrier. In his cradle or bed, too, the baby notices the proximity of the sides, the cuddly toys and his blanket. The playpen is a little bigger. The sides are a little further away and the child experiences that he can move without coming into contact with a boundary. On the floor, the space feels different again: as the child moves, he encounters the legs of chairs or the side of a cupboard. On a couch, he experiences the back of the couch and

the side by pushing against it with his feet.

Toddler

When your toddler starts to walk, a push cart or pram can help him stay balanced and will also function as a buffer between him and an object.
If you make a sound, by clapping your hands, tapping your foot or making a clicking noise with your tongue, your child will get some idea of how big/small, high/low the space is. Your voice will sound very different in the echoing space of a bathroom than in the intimate space of your child's bedroom. The child feels the confines of a small space with his body, for instance when he is crawling underneath a chair or a table. He will get the same experience from playing in a small tent or play house. Crawling in and out of a small space remains a popular game with toddlers for quite a long time. A big cardboard box can be turned into a great play house, and so can the table when you crawl underneath it together.
To get a sense of a big space, the child will have to move about. He can crawl or walk along the walls or the edges of a carpet. Lift your child up and make him feel the upper edge of the door, or the ceiling. You can also make an obstacle course in your living room using cushions, chairs and carpets and do a circuit together.

Pre-school and primary school age

Playing outside

Outdoor play will give your child an opportunity to explore the garden, street or play ground. By running together or cycling, on a tandem or using a trailer bike, your child will experience the environment and distances in a different way. He learns, for example, that walking to the bakery takes much longer than running or cycling.

Throwing and catching

To play catch you should use a soft ball or a ball with a little bell. You can also put the ball in a plastic bag so the child will hear a crackling noise as it comes towards him.
Rolling or bouncing the ball between you is another good game for blind children. Another good toy is the cosmic catch ball. Each player has his own colour and the ball tells you which player you have to toss the ball to.

Cosmic catch ball

Flying a kite

Take your child out on a kite flying expedition. One of you can hold on to the line handle while

the other lifts the kite. This will make the child experience the distance between him and you. Ask the child to follow the line with his hand until he comes to where you are standing. When the kite goes up, he will feel the tug of the line and the movement of the kite. If you attach a bit of aluminium foil on the line it will gradually travel up. When the kite comes down you can show your child that the foil has reached the kite.

Kite

Travelling on public transport

Public transport travel is an excellent way of discovering things. With his feet, hands or a cane, your child experiences differences in height when getting on or off a bus or train.

He will also experience the sensation of speed, going around a bend, breaking and gathering speed. Every station platform has grooves that can be followed and which usually lead to all sorts of obstacles that have to be circumvented.

7 Touch and conceptualisation

7.1 Recognising

As your child explores, he will encounter many new objects and textures which will become familiar by and by. This is how the environment takes on meaning. Before children can recognise something they first have to discover and explore. You can help to make this journey of discovery as varied as possible. All tactual information is stored in the child's memory so when he comes across an object he has already handled he will recognise it. In this way a library, or database, of tactual information is created.

A child that can recognise objects, people and materials, is able to perceive differences and similarities. Not only can he recognise an object, he can also remember if he has come across the material it is made of before.

Baby, toddler and pre-school age

First, your child will get to know and recognise simple, everyday objects, like his cup or bottle, his spoon, shoes or toothbrush. These objects will be in among the things your child will recognise the quickest because they are used several times a day.

Once your child is familiar with everyday objects, you can start introducing new objects and materials. You can also go for more of the same: differently sized spoons, for example, or spoons made of different materials also extend the child's experience.

Encourage your child to explore everyday objects and make him aware of the shape, sound and properties of the material by naming them. Remember to use the same terms to describe the objects so the child will recognise them more easily.

Recognising clothing will become easier if you describe what the child is feeling (ribbed, smooth, soft) and which special features can be found on it (buttons, pockets, zips)

Here are some objects around the house that are fun to discover:

- A fruit basket with nice smelling fruit.
- A cutlery divider (remove sharp objects!)
- The plastic bowls, cups, colander, sieve in the kitchen cupboard.
- A basket containing two identical objects among other objects also makes for good play material. As the child explores it can recognise and combine the objects, for example two cups, two socks or two diapers. You can also ask him to name the objects.

Primary school age

Your child can help lay the table and find identical cutlery, cups, plates and placemats.

Recognising identical pairs

Distinguishing between people

People look different and it is an interesting experience for your child to find this out. Some people have long hair, others have short hair, some wear earrings, rings, necklaces or glasses and men can have a beard or a moustache. The child recognises the other children in the class from their clothing or voices. Can your child recognise classmates or family members if they speak in a funny voice or if they change their appearance, for instance by wearing a hat or a pair of glasses?

7.2 Perception of detail

Details tell the child much about objects, persons and the environment. Details enable him to recognise the object and make him understand what you can do with it. Details also determine the difference between the things the child encounters while exploring. It is important to discover as many details as possible.
Some objects are very similar to each other and can only be told apart by exploring details.
Not all blind children actively look for distinguishing details on objects or persons.
If your child is reluctant to explore, you can make him aware of these unknown details and encourage him to discover them for himself.
Be explicit about what it is that distinguishes one object/person from another. Start with obvious details that are easy recognisable and gradually introduce smaller details that are slightly more difficult to discover.

Toddler and pre-school age

Frequent naming and describing the details your child encounters makes him aware of their existence and, hopefully, curious enough to discover them on other objects. Start with the details of normal everyday objects, such as the handle of a cup, the hairs on the toothbrush, the teeth of a comb, the stem of an apple, the grooves on the leg of the chair, the handles on the kitchen cupboards etc.

Toys can have lots of details: the ears on the giraffe, the eyes or nose of a doll, the sticking out bit and the hole on the snap-lock beads etc.
As your child's fine motor skills develop, he will discover smaller details, such as the screw thread on a bottle top and the small buttons on a cardigan.

Primary school age

Collections
Collect as many different types of keys as you can and put them in a box. Let the child play with them for a bit and then ask him to find the differences by exploring the details. Try to find some keys with locks as well, so the child can practice opening and closing them.

Encourage your child to find the differences between car keys, bicycle keys, house keys and pass keys. You can also collect buttons. Small details, like the shape, texture, the number of holes and the size distinguish one button from another and your child will enjoy finding them out. Any collection can stimulate the perception of detail: beads, small stones, pine cones, autumn leaves, toy animals or Lego stones. One of the first things your child will do when starting to read is learning to recognise and count the dots. Perception of detail plays an important part in preparing your child for Braille.

7.3 Discrimination

Finding your own toys amongst a lot of other stuff is not an easy task. First you have to learn what makes your toys different from the rest and what makes them similar. This is called discrimination. Children start discriminating by using the mouth, then go on to use a combination of the mouth and hands and end up using mostly the hands. The feet are also an important source of tactual information.

Discrimination skills are learnt by exploring a variety of objects and materials. You can explain what the objects are, how they feel and name

Collection of keys

Collection of buttons

the details. Encourage your child to describe and name what it is feeling. This will help him as he discovers the differences and similarities between objects.

Toddler and pre-school age

Food
Manipulating food is a good way to discover the difference between substances: chocolate sprinkles are granular, custard and yoghurt are smooth, breadsticks and biscuits are crispy. There is also a difference between cooked and uncooked food: let your child feel the uncooked spaghetti before serving him a plateful.

Odd one out
Give your child some spoons to play with. Place a Lego stone among the spoons for the child to find and identify. You can do this game using all kinds of objects. Gradually increase the complexity of the game: it's quite hard to recognise an orange among apples.

Example of a home made puzzle

Walking barefoot
Walking barefoot not only tells your child if he is walking on sand or on a carpet but also when one surface changes into another. See what your child makes of the differences between the surfaces when he is wearing shoes.

Beading
Beading helps your child to distinguish between different shapes and sizes. You can make the exercise more complex by asking him to copy an example. Start by giving the child two or three differently shaped beads to work with, then add a variety of shapes and sizes. Structure the activity by putting the beads in a container and letting your child work at a table or tray with high side walls.

Dominoes
There are several types of tactile domino sets available for young as well as older children. You can also make your own.

Puzzles
You can glue different, tactile materials to wooden puzzle pieces, such as coins, buttons, a small clothes peg or foam stickers. (see photograph).

Touch memory

Primary school age

When your child is a little older, memory games can also help discrimination skills. Try 'Voel de vorm' (Playing with shapes by Jumbo). The game consists of a series of plastic squares with different patterns. The child has to find two squares with identical patterns. If more players are involved they can exchange squares and form pairs that way. The child with the most pairs wins. Also have a look at **www.kidikado.be** for more ideas.

7.4 Constructing and reproducing

Constructing is the ability to build something. Examples of simple constructions are stacked cups, blocks or boxes. More complicated constructions can be made with Lego or K'nex. The point of reproducing is to explore an example of a construction in order to copy it. Both constructing and reproducing involve motor skills, cooperation between the hands, a knowledge of spatial concepts, such as left, right, in front of, behind, on top of, underneath, straight and oblique. Reproducing also involves memory skills. Doing lots of building activities, for instance with Lego, will give the child an idea of how materials are fastened together.
Not all children like building things. Blind children enjoy putting blocks next to each other as much as building a tower.

Toddler and pre-school age

Stacking cups are a great toy. First, you and your child can try stacking them or putting one on top of the other. In order to make things manageable for your child you can begin with two or three differently sized cups. These should be easy to stack. Then you can complicate things bit by bit by adding more cups until they are all stacked.

Pegs and pegboards

Your child can make rows and figures as well as lines and shapes using round or square pegs. When your child is a little bit older you can also use mosaic pegs. These are available in a number of sizes.

Building with Rubbablox

Rubbablox **(www.rubbabu.com)** is a construction

set made of soft natural foam. The material feels lovely and inviting. The set consists of blocks and triangles with connectors. These blocks enable the child to construct a tower without the blocks rolling out of reach.

Your child may get discouraged if his tower keeps toppling over. You can prevent this by giving him a ground plate for Lego or Duplo constructions, or a magnetic board for magnetic bricks. Use a table or tray with high side walls to keep the material from falling to the floor and 'disappearing'. Join in the activity and let your child feel what you have built. You can also show him that staggered building bricks make for a sturdier wall.

Rubbablox

Pre-school and primary school age

If your child knows his way around Lego and K'nex, you could try Meccano as the next step. It is available in both metal and plastic. Meccano screws can be fastened by hand or using a screwdriver. It can be used to make all kind of shapes, for instance a car. With Lego and K'nex the child can get started straight away. He can build both two dimensional objects (using a ground plate) or three-dimensional objects (a car or a house).
To practice reproducing, you can build a car and ask your child to copy it. It is best to start with a limited number of parts and increase the number gradually.

Building a tent

Sheets and blankets can also be used as building material. A big tablecloth on a table will create a tent. You can also use two chairs to drape the cloth over.

7.5 Part-whole relationships

Many things are made up of different parts. Food, for instance: a slice of bread or half an apple are part of a bigger whole. If the child is to form a correct mental picture of everyday objects, he needs to be aware of this fact. Begin by introducing your child to the complete object: tell him what it is called and explain what can you do with it. Naming the objects gives them meaning. This process is called conceptualisation.

If you always give your child pieces of apple, he will never learn that they form part of a whole apple.
The first step, then, is getting to know the whole object. If your child stops mid-way, encourage him to explore further. Ask your child if he knows what it is yet so you know if he needs more explanation.

Objects that go together can be completely different in size, texture and shape. Shoes and shoe laces or bottles and bottle tops are some of the most obvious examples. The relationship between these objects needs to be made very clear and logical to your child.
Then there are objects with moveable parts. By moving them, the child learns these also form part of a whole: the arm of a doll or a key in a lock, for instance.
The cars in the photograph are so-called click clack cars. The child can take them apart and put them together himself, making a whole from different parts. **(www.clickclackcar.com or www.platotoys.eu)**

Click clack cars

Toddler, pre-school and primary school age

Preparing food
Your child can learn much from helping you to cut up fruit and vegetables. Cut something up and then reassemble the pieces to form a whole again. By describing the process you make your child understand what is happening. Tasting and smelling the food provides extra information.

Here are some examples of food which will help your child understand the meaning of part-whole relationships: different kinds of fruit, whole and cut up, vegetables, such as broccoli and cauliflower, whole and cut up in spears, a cake cut up in parts, a teabag and its paper wrapping, a straw attached to a carton of lemonade, a piece of orange peel and a whole orange, a cube or slice of cheese and a big piece of cheese.

'Broken' and 'gone'
Objects with missing parts are very effective when it comes to explaining part-whole relationships. Use a sweater with one sleeve turned inside out, a car with a missing wheel

Toy pizza

or a puzzle with a missing piece. If you break something, show your child the pieces and explain what happened. If you show your child objects with missing pieces, remember to show them the complete object as well so the child can compare the two. This will help him understand what it means when something is 'broken' or 'gone'. He will also understand that it is not possible to cycle when one wheel of the bike is missing.

7.6 Tactile-spatial perception

Space is a difficult concept for a severely visually impaired child to understand. The lack of tactile boundaries makes knowing where he is in space and moving in that space quite a challenge.
Your experience of space changes with every movement you make. The movements of his own body will teach your child about spatial concepts like up, down, on, under, in front of, behind and next to. In order to perform such everyday actions as sitting down at the table, hanging up his coat, packing his schoolbag and laying the table, the child needs to understand and master these spatial concepts. These concepts are visual concepts and you need to be very clear when you ask your child to locate something. Say, for instance, 'the block is next to your foot', or, 'the wardrobe is behind your back', or, 'I'm putting the block in your hand'.
Blind children often fail to recognise a previously upright object that is turned upside down. They need to rotate the object in their head and that is not easy if you have not been able to see how the object came to be upside down in the first place. In order to understand the world, the child needs to experience that objects can be turned over or go 'topsy-turvy'.
The knowledge that the 'left hand side' is the 'right hand side' to the person sitting opposite is another important part of spatial skills development.
Spatial insight also influences your child's ability to read. In order to learn Braille, he must be able to feel the relative position of the dots.

Toddler and pre-school age

The body
Spatial insight begins with the child's own body. Singing songs which involve touching the various body parts is a good way of learning which parts of the body are located at the top of the body and

which are down below. (song: head, shoulders, knees and toes).

The house
In order to make sense of a space, your child uses reference points, such as tables, chairs or a cupboard with shelves. Spatial concepts like first, last, next to, between, in front of, behind etc can be explained by making a train with chairs, or by telling the child who is sitting next to whom at the table.
A crawl tunnel is a fun way of moving from one place to another in space. Start out by shortening the tunnel so your child will not have to crawl very far and has a chance to get used to it. Crawl tunnels are available at **www.amazon.com**

Tents and other small spaces
In a big box, a laundry basket or a play tent your child can feel the boundaries of the space. This teaches him about his own size compared to the environment.

Counting steps
Counting the number of steps, for instance between the couch and the door, will give your child an idea of distance. He will experience that he can walk towards the door and that, after a given amount of time, he will be able to touch it. He will learn that big steps will take him there more quickly than small steps. You can make your child understand the concept of big and small steps by letting him stand on your feet and taking steps together.

Thresholds and kerbstones come in different heights and the child will need to raise his foot accordingly. The best way of learning this is through experience and lots of practice. You can buy textured stepping tiles at Ikea and pretend they are rocks in a stream: better get onto one quickly or your feet will get wet.

In and out
Games which involve putting objects into something and taking them out again are great favourites with many blind children. As time goes by, taking out remains a more popular pastime than putting in. Playing with stacking cups or a shape box with a lid are good way of developing spatial insight.

Tidying up
Turn tidying up, or putting away the groceries, into a spatial skills game you can play together. What can you find on the next shelf up? Which

Stepping tiles

things are standing next to each other? Which are in a vertical row? Blind children in particular like to experience where their food was before it ended up on their plate.

Primary school age
Exploring a room or another type of space together will give the child an idea of its size and contents. Older children can make a floor plan of their own room on German foil.

Laying the table
Laying the table requires spatial insight. You can let your child use real or toy plates and cutlery. Ask questions: 'Where do the plates go? Which side of the plate should the knife and fork be on? Where do you put the cups? Do not forget the napkins. You can fold them in different shapes and ask the child to copy them.

Toy kitchen
Use a Playmobil kitchen set, or a dolls' house, to create different arrangements of objects for your child to copy.

Chess and checkers
Chess and checkers are spatial games. In order to play chess or checkers with your child, you have to give either the white or the black pieces a texture so they can be distinguished from each other. Explore the pieces and the board together. Start by moving the pawn over the different squares. Explain the moves of the different pieces one by one. Put the pieces in position

Playmobil kitchen

and ask the child to copy the placement (first in the same order, then its mirror image). Explain the rules and start playing.**www.rnib.co.uk** and **www.aph.org** both have Braille chess codes (UK and USA) and a nice, adapted chess is available at **www.yankodesign.com.**

7.7 Figure-ground perception

An object is almost always placed on a certain ground surface. Sometimes it can be difficult to distinguish between the object and the surface through touch. This is why we call some types of surface distracting.
The ability to find certain materials or objects on a distracting ground surface promotes independence. It is quite handy to be able to find your gym clothes in a pile of towels, your Duplo figures in amongst the Duplo blocks or a euro among the woolly threads of a carpet.

When your child is a little older, he will learn to interpret two dimensional lines, graphs and raised relief maps during Biology and Topography classes. Children with diminished touch sensitivity or a mild form of tactile defensiveness find figure-ground perception especially challenging.

Baby

Put your baby's favourite toy on a surface full of interesting tactual stimuli. This can be a play mat with different fabrics, a woolly carpet or even grass. Is your child able to find his toys as he explores? If it proves too difficult, put him on the right track by making a noise with the toy.

Toddler and pre-school age

Hiding things

Start by letting the child explore a ground surface, such as sand in a sandpit. Then put one familiar object on top of the sand. Sandpits are a great place for finding hidden objects in. If your child wants to use his spade, he must find it among his other sand toys. It is very likely that some other object will catch his attention on the way and he will change his mind.

There are lots of variations on the sandpit:

- A container filled with uncooked rice or macaroni with objects mixed in, like a spoon, a big bead or a Playmobil figure.
- A container filled with scraps of paper or wrappers with objects mixed in.
- A container filled with leaves with acorns or pine cones mixed in.
- A box filled with beads with bottle tops hidden amongst them.
- A grab bag with presents.
- A more difficult - but definitely tastier option is finding chocolate figures in a tub full of chocolate sprinkles.
- You can also put a familiar object in a cloth bag and let your child guess what it is.
- When on the beach you can hide a shell or a stone in the sand. You can also collect shells and hide some stones among them.

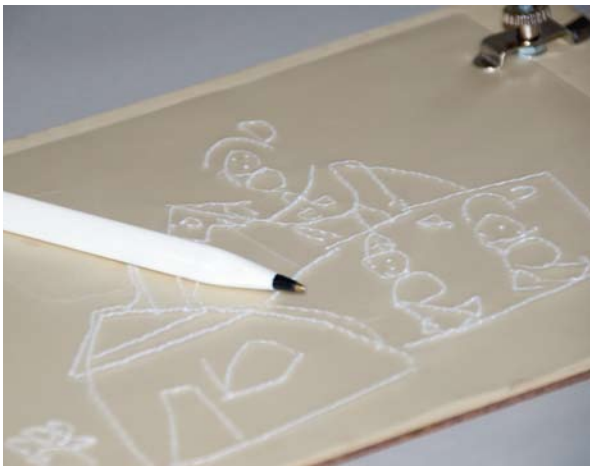
When you hide an object in a container with macaroni, your child should be able to feel the difference between the two. Do the game together so your child understands what is expected of him. Start by letting the objects, say

Toys among pasta

a little ball or figure, stick out from the macaroni so it is easier to find. A successful start will make him want to repeat the experience.
You can make the game more difficult by making the difference between the surface ground and the object smaller, for instance by placing a ribbed coaster on a ribbed placemat.

Primary school age

Handicrafts and drawing
Handicraft activities almost always include situations in which figure-ground perception plays a part. Think of gluing figures onto ribbed cardboard, for instance. You can use tactile material such as cotton wool, macaroni or ice sticks, or sand and shells to make a beach.
You can also buy foam figures which your child can glue onto a surface.
Blind children learn to draw on a tactile drawing board. The board has a layer of special foil which makes the lines stand out (available at **www.aph.org, www.tactileview.com** and **www.worldwidevision.nl**). Children can familiarise themselves with raised relief drawing by drawing lines or geometric figures and then feeling the result.
It is slightly more difficult to draw geometric figures next to each other and more complicated still to draw one on top of another. The child has to be able to distinguish the individual figures in the resulting drawing. You can draw a treasure map on relief paper with swirly lines for the child to trace until he comes to where x marks the spot. Of course you can also let your child draw whatever takes his fancy.



Relief drawing board

7.8 Third and second dimension

The objects we can see and feel around us are called three-dimensional, or concrete or real objects. The term two-dimensional is used for drawings and tactile images on a flat surface. School tasks often involve two-dimensional images, for instance on a raised relief work sheet, a raised relief globe or a raised relief map of the world. In order to understand these images, the child has to learn to recognise a three-dimensional object and transfer it onto a flat surface. It is best to practice this skill from a young age.

Making raised relief imprints
When you are out and about in the woods or on holiday, you and your child can collect things like pine cones or shells and use these objects to make imprints on sand, clay or plaster. You can also use objects like a comb, a ball or a the sole of a shoe.
Another option is to use sand moulds to make a number of shapes and ask your child which shape was made with which mould.

Recognising contours
In some peg puzzles, each piece represents a single object. If you have the real thing to hand – different types of fruit or toy versions of farm animals and cars - you can show it to your child. Make sure the contours of the piece are similar to those of the real object.

Building two or three dimensional structures
Magnetic building toys are great fun. They can be used to make three-dimensional constructions as well as flat, two-dimensional ones. Magnetic building toys, such as Smart Magnetics, is widely available.

Magnetics

Real fruit with puzzle pieces of fruit

Drawing outlines
You can use the tactile drawing board for drawing outlines around all kinds of shapes. Objects like a bottle, cutlery, a branch with a leave on it, an apple or a pencil can all be used for the purpose. Parts of the body, like a hand or a foot, are a possibility too. If you want to try out some geometric shapes you can use a plastic container for a square or an upside down cup for a circle. There are plenty of geometric shapes to be found in your kitchen.

7.9
Acquiring tactual language

It is important for children with a severe visual impairment to have a vocabulary which they can use to describe what they are experiencing when exploring. They need to build up an extensive tactual dictionary.
You can help by describing the properties of the materials your child is exploring using words like hard, soft, rough, smooth, angular, bumpy, dented, ribbed, wet, dry, warm, cold, prickly, hairy, downy, crumbly, sticky, lumpy etc. Describe the object as the child is exploring it. Words which describe what he is experiencing will help him recognise the object. He will also start using the words himself and this will enable him to make himself understood.

Baby and toddler

You can describe the properties of any (household) object to stimulate your child's tactual language acquisition. Here are a few examples: 'Please bring me your soft ball', 'Can I have a wet wash cloth, please?', 'Where is your car with the dent in it?', 'Be careful, that bush is prickly'.

Playpen mats with all sorts of textures can be shop-bought or home made. Household items such as brushes, sponges, coasters and strainers are all made of different materials and make good play objects. Do not forget to keep naming and describing the material your child is exploring.

Brushes and prickly toys

Some toyshops stock Lamaze toys **(www.lamazetoys.co.uk)** with differently textured surfaces. Also look out for different balls: hard, soft, with raised bumps or dents. Toys like this offer a lot of opportunities for learning different words and concepts.

Pre-school age and primary school age

Children like the fact that materials, objects and fluids have names for the way they are experiencing them (wet, cold, warm). Later you can introduce more nuanced qualifiers, like damp and tepid.
Challenge your child to describe what his favourite cuddly toy feels like, his pet, or things like sand (gritty) or food (crumbly cake or bread) so he becomes aware of tactual language.
Also describe the material objects are made of: a cup made of glass or plastic, a lock made of steel or another material that feels cold to the touch.
You can compare objects: your shoe is made of

Balls with different textures

leather, just like my wallet.
Tactile books are available for all ages. Tactile pictures also help tactual language development. Dutch publisher Lemniscaat – with the help of Royal Dutch Visio – is developing a series of children's books with tactile illustrations based on the tactual perception experiences of blind children **(www.visio.org/tastboek)**. The books are visually attractive so the blind child's siblings or children with a less severe visual impairment will enjoy them too.
Tactile books are also available from the RNIB **(www.rnib.co.uk)**, the American Printing House for the Blind **(www.aph.com)**, Les Doigts Qui Rêvent **(www.ldqr.org)** and Libri Tattili Pro Ciechi **(www.libritattili.prociechi.it)**.

8 Practical skills

8.1 Touch strategy

By touch strategy we mean the way a person uses touch. An effective touch strategy will give a child a lot of valuable information about his environment. To develop a good touch strategy, the child needs to explore different objects, materials, shapes and structures. That is why you have to give your child the opportunity to touch a wide range of objects. Children use their fingertips, nails, thumbs and fingers and the whole hand, or both hands, when exploring. Very young children also use the mouth and feet to explore and sometimes this continues into pre-school age.
The back, the front and sometimes the inside of an object can all be explored. If your child has a tendency to explore only part of an object, or explore very superficially, you can stimulate him to explore the whole object (not just the front but the back of a chair, for instance).
Once the child has learnt to explore a surface, object or space systematically, his touch strategy will become more efficient: he will execute a task more quickly, not miss any objects and not waste time exploring an object he has explored already. This will give him a better idea of where everything is on the work surface or in a certain space.

Baby and toddler

Explorative touch
Blind children often do not feel safe lying on a mat without feeling some sort of physical boundary around them. If you put pillows or a rolled up towel around the mat, your child will feel less exposed. You can buy play mats with different materials and small objects attached to them, or make one yourself. Your child will touch the objects and learn to seek them out.
An elongated toy, like a rabbit or a string of beads, invites the child to explore it from one end to another. Moving the beads on a bead maze is another good exercise.

Touch mats
Dutch organisation for the blind Bartiméus has developed special touch mats for the stimulation of tactual exploration in young children. The 30 x 30cm mats are made of silicone with different, textured patterns, like a circle or a cross.
You can let your child feel these mats while he is sitting in his high chair or on your lap. Research has shown that the mats encourage children to discover more, and in different ways. They rub their fingers over the patterns, scratch them with their fingertips and nails or explore them by moving their whole hand over them. For very young children with a visual impairment, these

Touch mat

are important ways of acquiring information.

Pre-school and primary school age

Making a figure with peg mosaic also requires a touch strategy. Place the pegs along one of the edges or exactly in the middle of the board so your child can actively set out to find them. Encourage your child to trace lines, patterns and figures in tactile books with his fingers. If you have a wooden train, you can build a great railway line with curves, bridges and tunnels together and push the train along the track. You will have to teach your child how to attach one piece to another. Explain that the bit that sticks out at one end of the track piece fits into the hole in the next and let the child experience the action of putting the two pieces together.

Tidying up and finding things

Letting your child look for his toys in a cupboard or a shelf will help him develop a touch strategy. Where have I looked already? Which shelf have I already searched? If you tidy up together, your child will know where to look next time.

Finding objects in a drawer or kitchen cupboard

The best touch strategy for trying to find something in a kitchen cupboard is to explore from left to right. This ensures that no object escapes detection. Discuss with your child where things should go: perhaps they could be arranged in a more logical or convenient way.

Dishwasher

Ask your child to help you fill the dishwasher. First ask him for the cups, then the plates and

Attaching railway pieces

then the cutlery until the whole work surface has been explored from left to right. After a while you can reverse roles and the child can put the things into the dishwasher.
Tip: make sure to turn sharp knives and forks upside down in the cutlery basket.

Exploring an unfamiliar space
Start by asking your child to follow the walls of the space and explore what he finds on his way. He can then cross the space to discover what is in the middle. As soon as your child is able to walk unaided he can use both hands to explore. Warn your child if he is getting too near to something sharp, hot or breakable, or a step. Arrange with your child that you will step in if necessary. Differences in surface coverings, rugs and differences in height can all be experienced with the feet. You can also let your child mount a set of steps to explore something that would normally be beyond his reach. He will also form an idea of the height of the ceiling, or a tree. And if you are very brave, you could even climb a tree together!

Washing the car
Washing the car is another pleasant shared activity which will boost the development of touch strategies. Sponge the car from back to front and from top to bottom. This will tell your child about the length and height of the car, and about some of its component parts. He can rinse the car using a hose. The challenge is, of course, to hit the car and not a passer-by. Let your child feel the difference between a dusty, dirty car and smooth, clean one.

8.2
Self help skills

Children also need touch for eating and drinking and dressing and undressing. Involve your

Cleaning the car: 'are you washing the rear light?

children in these activities from an early age. As your child grows older, he will gradually learn to do more for himself. It is a step-by-step process, from requiring a lot of help to less help, until the child only needs some verbal coaching or no coaching at all. Here, too, practice makes perfect.

Baby, toddler and pre-school age

Eating and drinking

Place your baby's hands around his bottle so he makes the connection between the bottle and the action of drinking.
Teach your child to eat independently by giving him something he likes and which is easy to hold, like a crust of bread, a breadstick or a biscuit.
A child can learn a lot about food from eating with his hands but there comes a time when he will need to use a knife and fork. Using a spoon or a fork can be learnt by practicing the movement towards the mouth together. Pricking food with a fork or putting food on the plate can be practiced in the same way. If you sit behind your child you will be better able to guide his movements.
The food will go all over the place of course but a big bib and some plastic sheeting on the floor will solve that problem. In time, your child will learn to eat properly.

Dressing and undressing

If you name the body parts and actions every time your child dresses or undresses, he will start to understand that you pull your jumper over your head and that socks go on your feet. Keep up a running commentary during the whole process: now lift your arms, reach out to mummy/daddy, lift this foot, now lift the other, roll over onto your tummy etc.
To blind children it seems as if things materialise out of nothing. Make taking the clothes off the shelf or hanger a shared activity so the child knows where they came from. Meanwhile you can talk about what kind of clothes they are, and how they feel: here is your soft sweater, your jeans, your shorts with the big pockets. Encourage your child from a young age to help while getting dressed: he can lift his bum while being changed,

A bodywarmer is easier to handle than a sweater

pull a sock off his toes, pull a jumper over his head etc. Dressing and undressing is easier sitting on the bed or on a small chair in front of it. Position the clothes in such a way that your child can put them on straight away.

Having a wash
Helping to wash and dry himself off can become a part of your child's daily ritual from a very young age. Always tell him what is about to happen: 'We are going to wash your hands now, doesn't that soap smell nice? Can you wash your face with a washcloth?' You can guide your child's movements in two ways: with the child's hands on top of yours or with your hands covering the hands of the child.
Keep things in a fixed place so your child can find them. Flushing the toilet and turning the tap on and off are some of the activities your child can do by himself.
Bear in mind that not all taps or toilets work in the same way. The child may not be able to manage them in a restaurant or at a friend's house.

Primary school age

Eating and drinking
We know from experience that it takes quite a long time for blind children to learn to eat properly and independently. A child of primary school age is already under quite a lot of pressure and eating properly does not always come top of the list. In the paragraph about eating headed 'baby, toddler, pre-school age', you will find information on how to teach your child to use cutlery.

Dressing and undressing
If your child knows where his clothes are, he can choose what he wants to wear. Pieces of clothing that go together can be marked with a special button. Getting to grips with buttons, zips and other fasteners takes time. Unzipping is easy but zipping up is a skill that the child does not usually master until primary school. Attaching a piece of string or a bead to the zip will make it easier.
When practicing tying shoelaces it is best to use two differently textured shoelaces. This is not the most practical of methods, however, as you have put two shoelaces in the same shoe.

Dealing with packaging
Packaging comes in all shapes and sizes. Help your child how to tackle it by taking him to the shops and giving him different kinds of bottles, tins, packs, screw tops, corks, caps and pull-tabs to explore.
You can practice opening packs and bottles together at home. Your child will learn how to manage different types of packaging and also what the difference is between a pack that is already open and one that is still closed. To open a fresh pack, you need more strength and often you have to remove a bit of foil or a small top as well.

Pouring

The best place for learning how to pour is the sink, a washing up bowl or a deep plate. It prevents the child from ending up with unpleasantly wet hands when the pouring goes on too long. Start with a pack that is half full. It is less heavy and easier to handle than a full pack.

Practice by asking your child to fill up glasses, mugs and jugs. You can vary the activity by using a (toy) teapot, a coffeepot or a thermos.

Keep to a fixed action sequence when pouring: The first thing the child has to do is to check whether the pack or the neck of the bottle is correctly positioned on the edge of the mug. He then curls his index finger over the edge of the mug and calmly pours the liquid with his other hand until it reaches the tip of his finger.

You can buy liquid level indicators which can be clipped onto a cup and beep when it is full. Level indicators are particularly useful when pouring hot liquids (available from **www.amazon.com**).

Pouring until you can feel the milk

Level indicator

Adolescent

Personal hygiene

Discuss personal hygiene issues with your teenager. He may be experiencing dry or oily skin or acne. He may have the beginnings of a beard or suffer from chapped lips. His nails may be long or short or he may perspire. To get an idea of what friends and relatives look like, it would be nice if he could discover how these aspects manifest themselves in them.

Go to a pharmacist together and find out about skincare products. There are many different types of deodorant and prices vary, too.

Which product is suitable to your child's skin and which one would he want to use? To avoid confusion it is best not to buy two different products with similar packaging.

Explain how the product is used: first clean your face, then put the cream on.

Teenage girls who decide to depilate their legs and armpits, and boys who are shaving, have several options. Shaving with a blade may be a bit scary so it is probably wiser to use an electric razor or, in the girls' case, depilatory cream. They can feel from the stubble when it is time to do it again.

Nail clippers or nail files are a good alternative to nail scissors.

8.3 Game-activity

Playing is fun and stimulates curiosity. Experimenting, learning and exploring through touch are part and parcel of play. Young children enjoy toys which make a sound. The sound is a reward for a certain actions and so encourages the child to try again.

Board games are good for teaching your child about rules and about winning and losing.

There are games which require touch and others which can be adapted to accommodate touch,

Cleaning the face with a cotton pad

for instance by adding raised relief material or Braille.
The home made games in the photograph below are described in an appendix at the end of the book.

Baby and toddler

Put some toys in your baby's cot. Chances are that he will accidentally hit them and this will make him want to grab at them or hit them again. You can also hang some toys in the play pen. Your baby will soon realise that when he hits a toy it does not disappear but bounces back every time. Everyday objects are also fun to play with: spoons, empty shampoo bottles, lidded boxes, a bucket, crackly paper, crinkle foil books, shells, pine cones and autumn leaves. Children love to put things into a box and take them out again and can do this endlessly.
Very young children like to play on a mat or on the floor so they can move, crawl, stand or sit freely.

Pre-school and primary school age

Some children love to play with clay, sand or shaving cream but not all children like this type of material. Perhaps your child enjoys rummaging around in a bag full of scraps of paper or containers filled with uncooked rice or small plastic spoons. Observe if your child exhibits a clear preference or dislike for certain materials and sounds. By playing together, you can help your child discover the possibilities of the play materials.

Fantasy play

Play material like a doctors set, a train set, a garage with cars, a toy tea set or a play kitchen with pots and pans stimulate fantasy play. It is even better if the toy versions are very similar to the real thing, like metal pans and cutlery.

Farm game

Smurf game

Play area

You can make it easier for your child to find his toys by putting them into baskets, boxes or other types of container. A well-defined playing area where your child can put all his things around him and play undisturbed is also a good idea. When your child is a little older, you can give him his own chair and a table top with high side walls. Make sure his toys are in a fixed place so he can find them when he wants them.

Board games

Here are some of the board games you can play with your child. You can buy noughts and crosses boards with a playing grid but you can easily make one yourself.

- Tictac Boom is a game in which the participants are given a card with a syllable on it which they have to make into a word. All the while a ticking 'time bomb' is handed from person to person. The person holding the bomb when it explodes keeps the card. The person with the fewest cards wins the game. This game can be easily adapted by marking the cards in Braille using transparent stickers.
- An adapted version of Sudoku, called Sudoki Touch, is available from the American Council of the Blind **(https://store.acb.org/)**. For an adapted version of both sudoki (for children with limited sight) and symboku (for the blind), go to Dutch website **www.bab-sp.nl**
  Both games use tactile shapes. The numbers or symbols can occur only once in every row and column. Parents can gradually make the game more difficult by starting with one row and then filling in the second row. There is no winner in this game, it is just a matter of finishing the game successfully.
- Monopoly
  Before you start to play monopoly you must give your child an opportunity to explore the board and the numerous cards, bank notes and houses. Explain what they are for and where they all go. It may help the child to play with a friend who can help him keep track of things.
  An English language version of Braille Monopoly is available from a number of online outlets.

Symboku

8.4
Linking function to object

In the course of each day, your child comes across a number of everyday objects: his plate and cutlery, the tap, soap and his toothbrush. In order to become more independent, your child has to learn what these objects are for and how to use them. Practice is key and the more the child uses the objects, the better he will understand their function.
Discovering differences and similarities between objects is a good way of finding out what they are for. A toothbrush, for instance, does not feel the same as a washing up brush. You must give the child an opportunity to explore the object completely. Explain what the different parts are for and how the objects are put together (depending on the age of your child). Remember that when we look at a vacuum cleaner, we see the whole object. Your child may only be familiar with the on and off button and the metal tube.

Toddler and pre-school age

Everyday objects
Ask your child to help you with the daily chores, like putting the washing into the laundry basket and then into the washing machine, putting flowers in a vase, getting the bread from the bread box, vacuuming etc. He will discover the objects around him and learn how they are used.

Pre-school and primary school age

Pumping up a balloon
Let your child explore the balloon pump first and try out the action without a balloon.
Then attach a balloon and let him feel how the balloon expands as the air is being pumped in. You can help your child inflate the balloon, remove it from the nozzle and tie a knot in it.
It is also fun to show the child what happens if you do not tie a knot in it and the air escapes. Prepare your child for the noise this makes.
Of course you can always blow up the balloon yourself. A slightly more complicated variation of pumping up a balloon is pumping up a bicycle tyre with a bicycle pump.

Using kitchen appliances
If you are doing something in the kitchen, like baking a cake, invite your child to have a look at the electrical appliances you are using. A mixer with beaters is used for making whipped cream but for pizza dough you need dough hooks. These feel different from beaters, and so do the substances once they have been mixed. In order to explain how a manual tin opener works you need a tin with a tangible ridge. Turning the twisting key will be easy when the tin opener has not been fastened onto the tin but quite a bit more difficult when it is. Let your child experience (very carefully) the sharpness of the edge of an opened tin.
A vacuum cleaner has all sorts of buttons, a long ribbed tube and a cable . It also makes a lot of

noise. It can be fun to hold your hand against the end of the tube to feel the air suck the palm of your hand, and to hear how it sucks up chocolate sprinkles or breadcrumbs. If you vacuum up a small stone, your child can tell from the rattle that it is in the tube. The duration of the noise will also give him an idea of how long the tube is. You can also let him feel the dust bag in which all the dirt is collected.

Bicycle pump

When you use your garlic press the child can experience that the clove of garlic goes in hard but comes out squishy and smelly. Let him feel the holes in the press and the action of the press as it presses the garlic.
In this way you can let your child discover and explore every tool and appliance around your house and garden.

Primary school age and adolescent

Recognising money

Coins have a number of characteristics. They have a certain size, thickness, weight and a distinguishing rim. Your child can use these characteristics to sort the money into categories and if he knows the denomination of the coins, he can count how much pocket money he has, or how much shopping money. Banknotes can be recognised from their dimensions. If you put a banknote in the eurocash test device **(www.caretec.at)**, the denomination can be felt in Braille.
Another way your child can find out which banknote he is dealing with is to use his thumb as a measuring unit. A five euro banknote is slightly bigger than the length of a thumb, other banknotes end further down the hand. After practicing this a number of times your child will know which euro banknote he is handling.
Give your child a money box with different compartments so he can separate his coins. There are wallets with one compartment and wallets with multiple compartments. Try them

Finding out which banknote is which

out together to find out which would be the most practical choice. Practice taking out and putting in money at home. When your child is ready to do some shopping on his own, it is best to start out by putting just two banknotes in the wallet. By folding them in different ways your child will be able to tell which is which: fold a five euro note once and a ten euro note twice, for instance.

8.5 Action-sequence

With every purposeful action, we keep to a certain order which is more or less fixed. It is more efficient if you remember which actions you have already performed and which you still have left to do. You can help by dividing an activity into separate steps and teach them to your child one by one. You can practice the first steps together and let him take the final step independently so have the satisfaction of concluding the activity successfully. If your child has trouble remembering the right order of the steps, you can help by naming them. He will then be able to sum up the steps himself at a later stage.

Toddler, pre-school and primary school age

Dressing and undressing

Dressing and undressing are activities which need to be structured according to a fixed action sequence. You can help your child, even from a very young age, by naming the piece of clothing which is next in line to be put on. If your child knows how to put on his clothes but not the order in which he should do it, you can lay out the clothes in the same way every day so it will be clear to him which piece of clothing comes first, second etc.

"Where does your t-shirt go in the wardrobe?"

The child's wardrobe can be made to reflect the sequence as well: you can put his underwear on the lowest shelf and work up from there. Involve your child in clearing away clean laundry so he will learn where his things are.

Eating and drinking

Lay the table together so your child learns which objects are needed and where everything is. Keep to a fixed action sequence when making a sandwich: perform all the steps together: scoop up some butter from the tub, cover the surface of the bread, put cheese or marmalade on the bread and cut it up. Slowly but surely, your child will be able to perform the actions independently. As with the other activities, you can help by describing the actions, naming the food and discussing how it feels and smells. This will give the child a clearer understanding of the action sequence.
The fixed action sequence of opening packs and pouring liquids is described in paragraph 8.2, under Self help skills.

Handicrafts

Engaging your child in a creative activity takes some preparation. First, you must collect all the materials you need and arrange them on the work surface in an orderly manner. Allocate a fixed spot to the glue and the scissors. Put loose objects in a container and use a tray with high side walls for the child to work on so things stay where they are. Do not forget a small waste paper basket so you can clear up as you go and a cloth for the child to wipe his hands on. Things will inevitably become a bit messy no matter how organised you are.

Primary school age and adolescent

Most children like to make coffee. You can teach them how to use the coffee machine in small steps. Start by pouring the water in yourself and put the filters and coffee next to the machine. Eventually your child will master all the actions needed to make coffee, from getting out what is needed to pouring and serving.

Making coffee with a Senseo coffee machine

Packing a bag

Every child has to pack a bag at some point in his life: a school bag, an overnight bag, a laptop bag. It will be much easier for him to find his things if he knows what is in the bag and in which compartment. You can discuss with your child which bag is best for which purpose.

When you are packing the bag together, you must think about which things go in first, which things go together and how they fit into the bag.

You may not be able to close the bag if the books are in an upright position, for instance. A banana should not be put in between two books. A book, or clothing, that has been crammed in will become creased and damaged. After a few trial runs your child can have a go at packing a bag independently.

8.6 Dealing with variables

Dimensions, weights, positions, movement and places vary. As your child discovers the world, he will learn that some objects are similar but that their size is different, or that the material they are made of is not the same. He will learn that not all chairs are the same and that an overturned chair may feel very different from an upright one but that it is still a chair. Balls come in all materials and sizes, they can be heavy or light but they can all roll. It may confuse your child that a small ball can be heavy while a big, inflatable ball can weigh almost nothing at all. Stationary objects can be made to change position: toy trains or cars but real cars, bikes and buses move, too.

Pre-school and primary school age

In order to let your child experience variables, the first thing you do is to describe the properties of the object your child is exploring. A ball can be big, soft, smooth, light or heavy. Present your child with two very different balls in order to emphasise how different they can be.

An upside down object does not feel the same as an upright object: your child may not recognize his topsy-turvy toy car or cup. The position of an object is another variable your child will have to learn how to cope with.

- Put lots of different spoons and forks in a basket and look at the difference and similarities together.
- Look at different types of hats together: what is the difference between a cap, a woolly hat, a panama? Explore the hats together and name the differences so they become a meaningful part of your child's vocabulary.
- You can do the same with bags, which in spite of their different shapes and sizes, share the same function.
- A folded or rolled up towel or one hanging from a hook in the bathroom is still a towel.
- A folded umbrella is the same umbrella when it is opened to form a screen to protect you from the rain. Explore the whole of the umbrella together and go out in the rain to show its function. Umbrellas can also be made of different materials.

A folded and an open umbrella

machine: it feels wet and heavy and squishy. Can your child still recognise the individual pieces of clothing? Put the wet clothes in the dryer or hang them on the clothes line together. After a while the clothes feel different again: dry, creased, and warm if they are fresh from the dryer. It is not until the clothes have been ironed that they feel the way they feel when your child puts them on in the morning.

Wrapping a present

Different sized presents needs different sized sheets of wrapping paper. You will need a bigger sheet for a book than for a small box with a ring

Primary school age and adolescent

Doing the laundry

Laundry is full of variables: the laundry basket holds many different types of clothing: trousers, t-shirts, underwear, sweaters. These also come in different sizes. Sort the laundry together. Recognising whose clothing it is can be a fun game. Maybe the child is able to feel (or smell!) that the clothes are dirty.

Turning on the washing machine is not straight-forward for blind and partially sighted people. You can use tactile marking paste or bump-ons **(available at www.rnib.org.uk, www.indipendantliving.com, www.worldwidevision.nl)** to mark the settings of the washing machine. Let you child take the washing from the washing

Sorting the laundry

in it. By exploring the present your child can estimate how much paper will be needed. A CD makes a square package and a round box a round package.
Talk about what you can do to make your package a festive one: stick a few balloons on a present for a child and a flower on a present for grandma.

'Water magic'
Put a container with water outside with a floating object in it . After a night of frost you can show your child how the objects is no longer moving but frozen solid. Take the container inside and let the child feel how the water slowly melts and the object is released. Of course you do not have to wait for winter to do this experiment. Just use the freezer or the freezer compartment in your refrigerator.

9 Introduction

This part of the book tells the stories of four couples and their blind child (ren). The list of questions and subjects they were sent prior to the interviews brought back so many memories that they couldn't help making little side steps every now and then. These very personal associations and memories have been included with their permission. Every story starts out with a description of the family situation. Then the parents describe in their own way how they raised their blind son or daughter (s) and the adaptations they made along the way. We have also included their tips and advice to other parents.

We spoke to Joey de Man, mother of Marina (5), Monique Koopman, mother of Maaike (14), Bert and Hanneke Prins, parents of Majke (21) and Mr and Mrs Glorie, parents of Ineke (48), Bert (47) and Charlotte (39). The interviews have been placed in historical perspective. We begin with five year-old Marina and we conclude with Ineke, Bert and Charlotte and their experiences of growing up blind child some decades ago.

Marina's parents were able to make completely different coaching and caring choices for their child than Mr and Mrs Glorie for their children all those years ago. The integration of blind children in mainstream education has become common place but it wasn't always so. Mr and Mrs Glorie pioneered this development. They were among the first to decide that their children should be taught in mainstream education instead of a special education facility for the blind. Remember that this was before the days of itinerant special education support services. You can read how they coped in the fourth interview. Maaike and Majke both went to mainstream schools before going to a special education school.

We hope the honest accounts of these parents and their tips and ideas will inspire you.

10 Interview with Joey de Man, Marina's mother

Marina was born on November 10, 2004 to Robert Kovac and Joey de Man. When she was eleven months old, Marina was found to have eye cancer (retinoblastoma). One eye was removed straight away, the other was treated with radiation.
In the months after the operation Marina was able to see clearly with her remaining eye but after a haemorrhage in March 2006 she could only distinguish between light and dark.
In August of the following year, Marina's remaining eye had to be removed as well, leaving her completely blind. In 2008 Marina went to a mainstream school in Ridderkerk. She likes it there and has made many friends.

Marina's mother thinks that the saying 'you don't see things as they are but as you yourself are' describes her family situation very well. They as parents see things in a different way from their daughter who has to discover the world through touch and sound. But it also means that people often see problems and limitations where there are none.

Stimulating tactual development

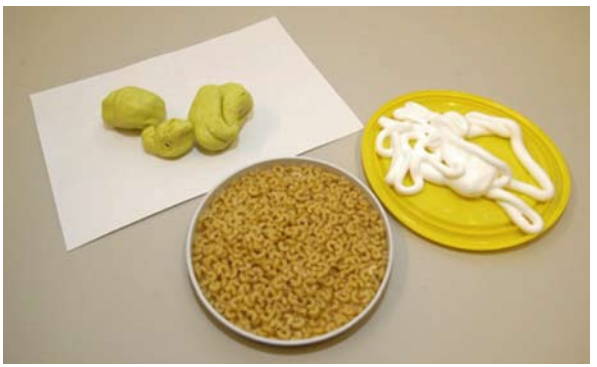
By encouraging Marina to experience all sorts of objects and materials her parents try to stimulate her tactual development. Marina suffered from tactile defensiveness when she was very little. Lots of things were dirty or scary to her, such as the grass beneath her feet. She tried to avoid coming into contact with soft and slippery materials. Her parents accepted this but slowly but surely introduced more gooey stuff, such as 'dinosaur poo' or 'slimy snot' (you can make this yourself or buy it in a toy shop) to expand her range of tactual experiences.
This helped Marina over the worst of it and now she even explores and eats her food with her hands. Activities involving paint or glue are still not on her list of favourite things but Joey said experience has taught her that forcing Marina to engage in certain activities is counter productive and doesn't help her tactual development.

Learning new concepts

In order to teach Marina new concepts, such as 'aeroplane', her parents gave her one or more miniature versions to explore. Then they took her to experience the real thing. They also gave her an opportunity to explore the apartment building the family live in. They took her up in the lift, then used the stairs to go down again. This gave Marina an idea of the height of the building. They also looked at different cars together by walking around them and sitting in them. When Marina's

mother spotted an old ambulance which looked very different from a modern one, she asked the driver if her daughter could explore it. Together they discovered that the door handle of the old ambulance was very different from the ones Marina had explored so far. Her mother says that requests for Marina to explore something are usually met with a positive reaction. Thanks to this, Marina now has a pretty good idea of what a policeman, a fireman and an elephant look like. Marina's parents regularly take her out on a 'feel day'. They have visited a DIY store, where she learnt about hammers, nails, roof tiles, and toilet bowls. They have also been to a music shop where Marina could explore and hear a number of musical instruments.

When she wants to explain something that is not concrete and tangible, Joey refers to things Marina has already experienced. She couples visible concepts to smell, taste or touch. She has taught Marina that you can feel the sun because it makes you warm and that the moon is the sun as it sleeps: you can't feel it but it's there all the same. Listening to her mother reading about Winnie the Pooh's blustery day allows her to create her own images. This became evident when Marina and her mother played that Marina could see and her mother couldn't. She explained that you can't see clouds but that you can fly right through them. Her mother explains colour by linking it to temperature. Red is warm, like a brick that has been put in hot water. Blue is cold, like a stone that has been in the freezer.



Tangible material which can be unpleasant to the touch in case of tactile defensiveness

Joey says she wants to use TactileView, a computer programme which transforms flat pictures into raised relief pictures using a Braille printer. These two dimensional pictures are not always very accurate but Joey thinks they will give Marina a clearer understanding of certain things and contribute to her tactual development.

Exploring unfamiliar surroundings

Initially Marina's parents decided to teach her fixed routes around the house. This didn't work because Marina went wherever she pleased. When confronted with a new and unfamiliar space, Joey always accompanies her daughter on a walk through it so she can form an impression of it. Then Marina goes it alone, stomping her feet: she is very careful and relies very much on her hearing as she explores. Outside the house,

Marina relies on the sounds of her parents' clicking device for orientation. She also uses the reflections of the sound of her stomping feet and people's voices (echolocation) and when the wind is blowing she is also aware of the currents of air. These help her perceive big objects like lampposts and buildings.

Self help skills

Marina's parents want her to become as independent as possible. That is why they teach her to perform the day-to-day household tasks independently. She has her own little corner in the fridge so she can get her own juice. She is also learning to pour. Joey involves her in the cooking and lets her cut the vegetables and stir the soup. Marina's parents think you should never deprive a child of an opportunity for learning something new. Their house rule is: 'You can try (almost) anything you like but if you hurt yourself you mustn't whine about it'. Marina likes to cycle and roller skate in the street even though she occasionally bumps into people or things.

When Marina was three she no longer wanted to be held by the hand. Her parents gave her a cane, an improvised one at first, with a small paint roller attached to it, which was replaced with a collapsible cane when she was a little older. Marina always carries her stick when she goes out. She only uses it when she is in a crowded environment but her mother feels it's important she has it with her all the same. It makes clear to others that her daughter can't see. Depending

Wind chime

on the circumstances, they also make her wear a neon pink vest (available at Ikea) on which they have written the words 'I am blind'.

If Marina concentrates she can find the way from the neighbourhood square to her home by herself. When the wind blows, Joey hangs up wind chimes outside the house so Marina can use them as a reference point. When Marina is a little older, Joey and Robert want to ask the local council for some ribbed tiles to be placed in front of the house so Marina can play a little farther away from the house with the children in her street without needing anybody's help to find her way back.

Adaptations around the home

The only adaptation Marina's parents made to their home is a stair gate which they intend to keep. It is not difficult for Marina to find the table in the living room because it is placed on a rug. Marina can generally move through the house without bumping into things. Everything in the house has its place. All the toys are in a big box. Marina's mother tries to teach her daughter to put back everything in its place but this is still quite difficult for her. When her parents move something, they always explain what has changed. Joey changes Marina's room once a year with Marina's consent and puts new toys in her discovery corner every couple of months.

Recognising and finding clothing

Marina likes clothing that she can put on and take off herself. She prefers soft fabrics. Marina decides what she wants to wear. Her mother tells her if things match or not. This sometimes causes Marina to change her mind but Joey doesn't feel this is very important. The main thing is that Marina learns to make her own decisions. When Marina is a little older, her mother wants to colour code her clothes with labels. With the aid of a label reader Marina can decide which piece of clothing to wear with another.

Leisure activities

Marina likes to swim and play drums and she has private classes in both. She also participates in gymnastics classes with her sighted classmates. Joey used to accompany her and guide her through the room but this task has now been taken over by one of Marina's friends who wears a little bell tied around her ankle so Marina can follow her.

Marina's parents frequently take her to a covered playground. Wearing her 'I am blind' vest Marina can move freely. The other children automatically keep their distance because of the vibrant colour which tells them there is really 'something the matter' with her while the parents can read the words and explain them to their children.

Additional tips

Internet forums are a useful resource for information for parents of blind children.

Useful adaptations

Joey always carries an anti-slip mat which, she says, often comes in handy. A tray with high side

walls is also a good buy and is very useful when Marina plays with small toys which can be easily lost. Other handy adaptations are a bracelet with a little bell attached and a ball with a bell inside. And if you put some rice into a balloon blind children can play with them too. A Chinese doctor told Joey recently to use silk or satin (for clothing or a duvet cover, for instance) because these fabrics are pleasant to the touch and that this is important for blind people. Marina is going to try this out soon.
Joey has also made some adaptations for the classroom. She developed a tactile picto board for her daughter. The school uses a visual board to explain the daily schedule to the children, (like the ringing of the bell or an afternoon task). With her own picto board, Marina can now join in the discussion about the schedule with the other children. She is no longer excluded from the group and this makes her more independent.

Fun activities

There are various board games which blind and sighted children can play together. Marina likes 'touch and feel memory'. 'Croco has a tooth ache' (which involves pulling the crocodile's teeth if the crocodile's jaws don't get you first) is another game in which she can participate. With a few minor adaptations she can also play 'Pop the pig', a game which involves stuffing a toy pig with hamburgers until his belly pops open.
Other games are playing catch with a ball that sticks to a velcro glove and rolling or throwing a ball with a bell inside. Marina's mother says she often visits toy manufacturer's websites to find out about toys that are fun and economical (see paragraph 15.1 for websites).

Blind children tend to tense up a little. Dancing can be a good way of helping them to relax. Marina likes to dance. She also enjoys tactile books. Marina loves to ride her go kart or tricycle in the paved area in front of the house.
Her mother often paints Marina's face using glitter and skin adhesive to attach things Marina can feel, like feathers, macaroni or sequins.

Joey mentions a visit to the zoo as a fun activity. Some zoos have made adaptations for blind people, such as special tours for the blind and Braille information boards. A children's farm is another favourite destination. Sometimes it is possible to make an appointment so you can have a little more time. Joey arranged it so her daughter could feel newly hatched birds and lizards.

Arranging the bedroom

Instead of posters, Marina has foam Disney figures on the walls of her bedroom. They look nice and are tactile as well because of the raised relief details, such as the folds of Cinderella's princess dress. The room has also been decorated with a ribbon on which clothespins and a rope with different buttons are attached. There is a lavender bag in her wardrobe so her clothes smell nice. On a shelf along the length of her bedroom wall Marina can put all the small objects that she enjoys exploring.

Handicrafts

Marina enjoys making things. She likes foam stickers, making clay figures and painting. The paint she uses is mixed up with sand so she can feel the end result. Making strings of beads or buttons is also a favourite activity. These make nice decorations for her bedroom. With the help of a book Joey got from the library, Marina has made several musical instruments using simple materials. Marina also likes colouring in. Felt colouring pictures are suitable for this but you can also mark the contours by making little holes with a pricking pen. Joey sometimes sticks differently textured pieces of fabric on a piece of paper and asks Marina to find the corresponding pieces and stick them next to the original ones.

Presents

Marina's mother thinks Lego with a Lego base plate, a wooden train set with rails, toys that make a sound and musical instruments make good presents. Marina was given a bear-shaped frying pan so now she can make bear pancakes and fried bear eggs. Talking books and dressing up clothes are among her favourite presents. She was also given a Big Balance Board, a wobbly plank which promotes balance. Another gift was a big piano mat to make music with by stepping on the keys. The piano mat can be easily adapted by gluing rope or sticking tape on the lines between the keys. For her fourth birthday, Marina was given a membership card for the local zoo, and a pass for the person who accompanies her.

11 Interview with Monique Koopman, Maaike's mother

Maaike is the fourteen year-old daughter of Edwin and Monique Koopman. She has a younger brother, eleven year-old Teun. She was born after a 27 week pregnancy and has retinopathy of prematurity, an eye disorder in which the blood vessels of the eye are insufficiently developed and pull the retina loose from the inner surface of the eye. This can result in blindness.

Maaike grew up in a pleasant quiet neighbourhood in the town of Groet on the Dutch coast. When she was two she went to a Visio rehabilitation group. Her school career began in her local mainstream primary school but when she was six she transferred to the Visio school for blind and partially sighted children in Amsterdam. Teachers at the mainstream school were worried Maaike was lacking in social skills. For Maaike the switch to a new school proved very difficult. Initially her parents were very disappointed but now they are happy, especially because the development of self help skills is such a priority in special education schools. Maaike was always helped by her classmates in her old school but at her new school her teachers expect her to do things independently. Her parents had also heard stories of blind children who, after several years in mainstream education, had had to leave after all. Maaike is now in her second year of secondary education.

Learning new concepts

When asked how they explained new concepts, Monique and her husband said that naming and describing objects, actions and situations was something they started doing when Maaike was very little. They would say: 'Now I'm drying your arm and then I'm going to dry your tummy'. They also encouraged Maaike to explore as many objects as possible, often starting out by giving her a scale model of an object. Maaike built up a very impressive collection of Playmobil figures over the years (houses, furniture and animals). This enabled her to keep adding to her store of tactual knowledge.

Edwin and Monique don't think exploring and discussing scale models of things while sitting at the kitchen table is enough. Hand on experience is much more important so Maaike and her parents spent a lot of time at the supermarket where she could feel and smell lots of different vegetables. She was even invited to sit on the lap of the checkout girl so she could get an idea of what goes on when people come to pay for their shopping. They also went on a family outing to

the woods to explore different kinds of trees by feeling the trunk, the branches, the leaves and even the roots. To give Maaike an idea of how tall trees can grow, they walked with her along the length of a fallen tree.
Maaike had trouble understanding that her house is one in a row of five. Her parents decided to make her experience it. They took her out into the street and let her walk the length of the block, from door to door and garden to garden, starting at the neighbour's house on the corner. This convinced her that the five houses really were attached and that five families actually lived next door to each other. Later she learnt about other types of housing, like her grandparents bungalow which she could walk around and the apartment building of a school friend where people don't just live next door from each other but underneath and on top of each other as well, and where there is no garden.
Monique says she and her husband would take time to explain things to Maaike but not always. Buying a loaf of bread would take two hours if Maaike were to follow and understand everything that was happening. Her parents simply did not always have the time.

Although the Playmobil animal figures and cuddly toys bear some similarity to real animals, they feel completely different. Edwin and Monique wanted Maaike to experience what real animals felt like. Some animals were quite close by: Maaike's grandparents kept rabbits. Inspired by her enthusiasm, Maaike's grandparents took her on trips to the garden and the sand dunes where they found salamanders, snails and fish. Not all animals could be found in the direct vicinity so the family went to the children's farm to see goats and turkeys and to the zoo to see monkeys and snakes. When Artis zoo in Amsterdam organised a special tour for visually impaired children, Maaike was allowed to feel a tarantula. At Naturalis natural history museum, she sneaked a feel of a stuffed kangaroo when the security guard wasn't looking. Monique thinks parents of blind children should not be shy and just ask if their child can feel something. Some parents take this a little further than she herself would do. She mentions how she saw the parents of another blind child take a big tub they bought at the DIY store and fill it with water. They then put in lots of goldfish and let the child play among them so he could experience the movement of the water as the fish swam swirled around him, what they felt like and how quick they are.
Monique didn't find it easy to explain intangible things, like clouds and stars. She often described these in terms of how they look and feel. In the case of clouds she told Maaike that they look like cotton wool but feel like water.

Exploring unfamiliar surroundings

Maaike had to spend four months in the hospital before she could go home. Her experiences of the environment were limited. Even a trip to the supermarket seemed like a voyage around the world. That is why Maaike's parents took it slowly: they began by letting Maaike discover her immediate, safe home environment, then her

grandparents' house and then the space at the toddler playgroup. From there, they slowly widened the circle of her living environment so Maaike could integrate each new element and gradually come to grips with the world around her.

The family live in a safe neighbourhood and once the council had put down ribbed tiles in front of the house, Maaike could safely play outside. Her mother would keep a close eye on her too but when it became clear to her that the other villagers also looked out for Maaike and helped her when she lost her way she decided she could relax a little. When Maaike went to school, the council made a path of ribbed tiles from the house to the school. It also looked to the future and made paths to the shopping centre and the bar. Maaike uses these paths in combination with her cane. She had practiced the routes with Visio coaches and also uses echolocation. As time went by, Maaike became more independent. She is now able to go shopping on her own, when she needs help, she asks for it.

Whenever Maaike visits a new place, for instance when she goes on holiday, her mother always explains where to find the toilet and the toilet paper and how to operate the flushing mechanism. Maaike can then discover the rest of the surroundings on her own. To give Maaike an opportunity to go off by herself, her parents always choose their holiday accordingly. They prefer small holiday complexes which are easier for Maaike to navigate.

Maaike often takes part in the activities organised by Visio, such as a survival camp for children with a visual impairment. She has also been on excursions to a garage and a beauty salon.

Self help skills

Monique says that her daughter is thinking a lot about what she wants do after she finishes school. She's a member of a discussion group and is helped by the Orientation and Mobility department as well as a psychologist at Visio. Maaike finds it difficult to accept that many careers will be closed to her. Her great ambition is to find work in the music business as a keyboard player. She practices a lot. She also likes to write stories. Both Maaike and her mother think that Maaike can eventually live on her own. Initially Maaike wanted to live in Amsterdam but she now sees that perhaps her own village is preferable to a busy city.

Maaike's parents think she should be as independent as possible. They taught her from a young age that there is nothing wrong with asking for help but that she shouldn't become dependent on others. Maaike has learnt to choose her own clothing at the weekend or during the holidays: her clothes have all been labelled and are always in the same place. Her mother used to choose clothing with iron-on patches' but now Maaike makes her own choices based on what the fabric feels like. She likes soft fabrics. Maaike uses her nose to tell her if her clothes

need to be washed. On weekdays, when there's not much time, Maaike's mother puts out her clothes for her. Maaike has learnt how to make tea and coffee and she is also learning to cook using a Braille cookbook. She enjoys cooking but needs a little help with some things.

Adaptations around the home

The most important adaptation to the house was to have a fixed place for everything. Putting in a stair gate was another essential adaptation. When Maaike was little her parents put corner guards on the table and she could play safely in a plastic play ring provided by Visio. Another adaptation which Maaike still uses are the special dispensers in the shower, one for soap and one for shampoo. These enable Maaike to shower independently. A thermostatic tap also makes things easier for her. Bump-ons on the electrical appliances (indicating the right setting of the toaster, for example) mean she can operate these as well. Bump-ons are thick round stickers available from World Wide Vision **(www.worldwidevision.nl, www.rnib.org.uk, www.indipendantliving.com)** or DIY shops (Tesa). She also has a tactile measuring cup with a level indicator (Action). Maaike always uses a plate divided up in four sections. Her parents tell her where her food is: 'your potatoes are at four o'clock, your meatball at six o'clock and your beans at nine o'clock'.

Leisure activities

Maaike loves to play her keyboard in her spare time. She also likes board games and likes to listen to CDs, radio plays and talking books. Maaike likes a challenge and isn't afraid. That is why she has taken up horse riding and catamaran sailing, like her father. It makes her feel free, she says. When she was younger Maaike used to belong to a swimming club. The mainstream clubs did not have any individual coaching for blind children on offer and Maaike joined a group for disabled children.

Acting on the adage that making the moist of your impairment pays, Maaike recently came up with the idea of supplementing her pocket money by translating the menus of nearby restaurants into Braille. She also typed people's names in Braille at a fair once.

Additional tips

Monique found useful tips in a magazine published by the Dutch Federation for the parents of blind children (FOVIG) and was also given advice by Visio staff. She has also found useful stuff on eBay when she typed in search terms like 'Braille' or 'blind'.

With the parents of the other blind children in Maaike's discussion group, Monique would visit toy shops and see which toys and materials were suitable for blind children. There are various (board) games that both sighted and blind people can use. Maaike likes Mastermind Junior. The figures used in the game have distinctive tactile features so Maaike can play without difficulty.

Cookery book for blind and partially sighted people

Some games, like scrabble and monopoly, already have an adapted version while others can be adapted by making a few simple changes. An ordinary deck of cards can be adapted by marking the cards in Braille.

Useful adaptations

Monique and her husband used an upright writing frame and a Braille labeller to make the objects and spaces recognisable for their daughter and at the same time familiarise her with letters at a young age. They also translated children's books into Braille with a Braille machine.
Monique also said that when she was reading to Maaike she would often use objects to illustrate what she was reading. She would give Maaike a Miffy cuddle toy when she was reading a Miffy book, for instance.

Fun activities

When Maaike was little, she and the other children in her street would often play together in the sandpit or the small playground. Gradually, however, the children started to play in places that were farther away where Maaike couldn't follow. Although she still plays with a girl from the neighbourhood and sometimes chats with the children on a bench outside, chances are that Maaike will become more isolated as time goes by. Maaike doesn't seem to mind but her mother does.

In her spare time, Maaike likes to play showdown, a kind of table tennis for the blind. She also enjoys going to museums. Her mother always rings in advance to find out if there are things to explore and do for blind children as well.

Arranging the bedroom

Maaike's bedroom is practical and attractive at the same time. There are several very interesting objects to explore, like an ornamental owl, ceramic butterflies, an African mask, a plush lion's head mounted on the wall like a trophy and a moon-shaped lamp. You can buy doorknobs in the shape of flowers, or hearts.

Handicrafts

Maaike was never a great handicrafts fan but she could be persuaded to give certain activities a go. She liked working with clay and gluing things and also showed an interest in ironing beads, felt and ribbed cardboard. Recently, Maaike and a few of her friends at Visio helped make a tactile book.

Presents

Monique's favourite present for a blind child would be Apple's blind friendly MP3 player iPod shuffle. An adapted mobile phone is also both useful and fun. Maaike has a Nokia N82 which can be equipped with speech software so she can use the phone without any help. The websites of the Royal National Institute for the Blind (**www.rnib.org.uk**) and the American Printing House (**www.aph.org**) also have a good resource for speech software, fun crossword puzzles and talking books.

Maaike also likes girly gifts, like a purse or a make-up bag. When she was younger she was given a memo-recorder with which could record sounds. She also has a Braille cookbook and a number of talking books.

12 Interview with Bert and Hanneke Prins, Majke's parents

Majke is 21 and the second of three girls. She went to school in Leeuwarden until she was five. The family moved to Dronten where Majke went to a mainstream primary school. After a while she started saying she wasn't feeling very well and wanted to stay at home. Her parents thought Majke wasn't enjoying her new school but it turned out that she had hydrocephalus (waterhead) caused by a brain tumour. The tumour was removed but unfortunately the operation didn't prevent her from going blind. The tumour couldn't be removed completely and Majke had to undergo radiation therapy when she was seven and another operation at age fourteen. At the moment the situation is stable but because the tumour is unpredictable, the future is uncertain.

Majke not only lost her sight, her sense of smell and short time memory were also damaged. She also showed signs of a mental deterioration. All this meant that Majke had to leave mainstream education. She went to the Visio school for blind and partially sighted children in Huizen. She started by attending three mornings a week and gradually this was extended to the full five days. Recently she transferred to the Elizabeth Kalis home, a Visio centre for adults with a visual and mental impairment.

Majke likes the home: she doesn't stand out there and this makes her feel at ease. She only lives there during the week and goes home at the weekend. Soon, she will probably stay there full time. Majke divided her time between the centre's candle workshop, the pottery studio, the children's farm and the Nature and environment education centre in Eemnes where she looks after the animals. Majke's parents say Majke was never angry about losing her sight. She is much more bothered about her mental impairment. She resented the fact that she couldn't go to the Visio school in Amsterdam with her classmates because it would be too difficult for her. Neither does she like the fact that, unlike her sisters, she can't follow the English language series on television. She was sorry she couldn't be in a musical, or have an official graduation ceremony like her sisters.

Stimulating tactual development

A short time after Majke went blind, her parents made her a 'touch and feel box'. In it they put everyday objects, such as different pieces of fabric or, in the autumn, some chestnuts, acorns and beechnuts. This helped Majke to learn that different objects have different tactual properties: a piece of fabric can be very soft but a chestnut is very hard. Majke's parents' living room is still

littered with all kinds of bowls and containers filled with things like beads, shells and other objects interesting to the touch.
They stimulated Majke's tactual development by making her see things with her hands, from food to dead fish, Some parents may think this a bit unhygienic but Majke's parents don't agree. They feel that anything and everything can contribute to Majke's image of the world.

Learning new concepts

Majke didn't go blind until she was five so she already had a good idea of certain concepts. She knew what some animals and buildings looked like and she understood the vastness of the sea. Her parents built on this knowledge to explain new concepts. When Majke didn't know what a wind turbine looked like, her father explained that it looked a little like a windmill, something

Different shells for exploring

Majke had seen when she still had her sight. By drawing the turbine on German foil (something he often uses) he helped her form an image of it. Now that Majke is no longer adding new concepts to her visual image library, some of the images are starting to fade. She knows that grass is green but is no longer able to picture the colour.

Her parents have always taken Majke everywhere and stimulated her to explore all kinds of objects. They would go on special outings to let her experience things. When they went on a visit to the zoo, Majke was allowed to get close to an elephant by walking underneath it and touching it. She also held a snake. Majke herself contributed much to her store of knowledge because of her curiosity about the world around her. Her parents were always on the look-out for new things. When they happened to come across an American football player and some cheerleaders, Majke's mum asked them if Majke could feel the outfits of the girls and how tall the player was. While waiting in line at the supermarket checkout, Majke once examined the fabric of the coat of the person standing in front of her. Until the age of about fifteen, Majke used to watch educational programmes such as Sesame Street and special news bulletins for youngsters which also explained a number of concepts.

Bert and Hanneke doubt whether it is really very important for Majke to know what certain things look like. She is usually more interested in the function of an object and the sound it makes.

Exploring unfamiliar surroundings

Majke was given a cane at a young age. Her parents said 'You don't leave your cane at home just as we don't leave our eyes at home' and so made her take and use her cane whenever she went out. They were adamant about it and as Majke knew she needed her cane in order to walk independently (which she enjoyed), she never protested.
When Majke finds herself in new surroundings, the house of a friend of her parents, for instance, her parents often accompany her on a tour of the house to find out what it is like. Majke doesn't need much encouragement to go off exploring on her own. Her spatial skills are good and she can very quickly form a picture of the size of a room and what is in it. When the family moved house some years ago, they gave Majke a plan of the house on swell paper so they could prepare Majke for the change.

Majke's parents both work in care and they have a no-nonsense approach to Majke's blindness. Their attitude is that 'it's very unfortunate that you can't see but you will have to get on with it'. They never tried to shield their daughter from certain experiences. Majke was allowed to do what she liked and they stimulated her to explore and experiment as much as she could. Majke often played in the street with the other children. They didn't always take her blindness into account. They would leave toys lying around which Majke tripped over. Majke would be upset but her parents didn't pay much attention to it. 'It's not

very nice but it's over and done with now. Go back and play some more,' they would say.

Bert and Hanneke were always clear that Majke should build a life for herself in spite of her impairment. They worked towards this goal step by step. From the age of fourteen Majke went for short stays at the Visio residential department. Now she spends her weekdays at the Elizabeth Kalis home and goes home at the weekend. At the home Majke is encouraged to be as independent as possible and to stand up for herself. She has learnt to go shopping at the local supermarket and knows she can ask the shop staff for help if she needs it. Although Majke finds it difficult to plan her actions and doesn't cook for herself for that reason, she does sometimes eats alone in her room. She has a microwave and has no problem operating it.

When Majke was younger her father used to take her on cycling holidays on a tandem. They would go to places all around the country, preferably ones with funny names like Muggenbeet (Dutch for mosquito bite). Now Majke goes on holiday without her parents. Recently she went to France on a trip for people with a mental impairment organised by a voluntary organisation. Majke had a great time but found it difficult to keep up at times. Her mother commented that 'sometimes you have to take a gamble and perhaps it doesn't always work out. But as parents you can't predict everything'.

Adaptations around the home

Majke's parents always used stair gates around the house to ensure her safety. They also made 'recycled labels' so Majke would know one bottle from another. For this they cut up plastic bottles into sections, put 'Cola' or 'Juice' on them in Braille and slid them over the bottles. Although they could have done this with the jars containing sandwich fillings, they didn't need to because Majke recognised the shape of the individual jars.

Bert and Hanneke thought prices for adapted games for blind children were pretty steep so they decided to get creative themselves.
They marked the cards in card games with Braille and carved notches in the Ludo play pieces to designate colour. In this way Majke could distinguish her piece from her opponent'. Her father also made a wooden version of a Yahtzee score card so Majke could put matchsticks into the holes that mark the numbers.
Bert said he always uses 'DVD Shrink' to adapt his daughter's DVDs in such a way that she can access them without having to go through the menu. The programme can be downloaded free of charge from the internet.

Recognising and finding clothing

Majke is not able to buy clothes without help so her parents come with her. The parents usually take the initiative but Majke also has a say. Majke has no trouble with zips or buttons so they don't have to take these into account when choosing clothes.

Majke's mother often puts out ready-made combinations of clothing so Majke can choose between them. Baskets or Braille labels didn't work for Majke. Now she can decide in the morning whether she would like to wear a skirt of a pair of trousers without having to hunt for a matching jumper. This prevents her choosing things that would not look nice together.

Leisure activities

Majke likes handicrafts. She also likes to use the computer to send e-mails, or chat. She watches television as well: the spoken subtitles come in via her web box. Although Majke reads books in Braille, she prefers talking books. Her parents bought her a CD bag for her talking book collection as a replacement for a bookshelf or bookcase. The titles of the books are on the sleeves so Majke can find them and play them on her Daisy player without any help.

Majke has been a girl scout for years. Up until she was fourteen she went to a mainstream scout club but she found she was gradually losing touch with the other children. She now spends one weekend a month at a scout club for boys and girls with a physical impairment. She skates in the winter, practices sports in the evening and has even had diving lessons for a while. All these activities were organised by Visio.

Additional tips

Majke's parents really valued the contacts they had with other parents of children with a visual impairment. Hanneke still meets up for a coffee and a chat with the parents of two children with whom Majke used to share a school taxi. They exchange practical information but also talk about family matters (how to divide their attention between the blind child and their sighted siblings, for example) and their fears for the future.

Bottle with a reusable label

Fun activities

Bert and Hanneke did their best to find things to do which the whole family would enjoy. They went to the cinema where Majke could see a Dutch film and the others could choose their own film. They also went bowling and swimming. At the particular bowling centre they went to gates

could be placed between the lanes so Majke could play as well. Majke's parents particularly liked an outing to a zoo which organised special tours.

Birthday parties usually featured a lot of handicraft activities and were always a big hit with the children from the neighbourhood. On one occasion a Visio employee came with simulation glasses and canes to let the sighted children experience what it is like to be partially sighted or blind.

Arranging the bedroom

Majke's room is not only nice to look at but has lots of things that are pleasant to hear and touch as well. She has a lamp shade made from a lovely piece of fabric with small bells attached to it.
She also has several photo frames with 'pictures' made from things that Majke likes, such as differently shaped shells.

Handicrafts

Majke likes to make things. She has made several key rings form scoubidou strands and she also designed mobiles with figures made with ironing beads. She also makes tactile paintings with a polyurethane foam frame and gives them texture with feathers, beads, seeds or macaroni. She also likes to make necklaces out of small shells and beads.
Majke also enjoys sowing small beads onto bits of fabric which her mother has sown together beforehand. It's a nice idea to glue the result on a card and send it to someone.

Hanneke's tip for a making a necklace:
Buy a length of plastic thread of about 12 metres and thread as many beads as you need for about 2 metres. Then crochet the remaining thread around the beads starting from the beginning. Attach a fastener on the necklace.

Presents

Majke's parents haven't always found it easy to find the right present for their daughter. They often ask people to contribute money so they can buy something that is a little bit more expensive, such as a Braille cookbook, or a watch.
At Christmas, her parents gave everybody a Braille version of the names of all the participants so Majke could dole out the presents under the tree.

13 Interview with Mr and Mrs Glorie, Ineke, Bert and Charlotte

Ineke (48), Bert (47) and Charlotte (39) were blind at birth as a result of Leber's congenital amaurosis, an inherited eye disorder. Mr and Mrs Glorie have two other children, Jan and Olof. The family lives in the village of Egmond aan de Hoef where they had a bulb growing business. The parents are now retired but still run a flower stall and a mini campsite.

Growing up: Ineke and Bert

Ineke and Bert started their school careers at the local nursery school. Although they were the only blind children in the village, they were always accepted as part of the community. Bert would invite half his classmates for his birthday and they would all turn up. He was one of them and no one thought otherwise. Bert's character had a lot to do with this, his parents said.

After nursery school, Bert and Ineke went to the Wijnberg institute for the blind in Grave. They were interns there and were taught by nuns. Home visits were only allowed during the holidays. That turned the last day of every holiday into a sad event for both the parents and the children. Mr and Mrs Glorie were only allowed one visit in the intervening time so they wouldn't see each other for weeks. Mrs Glorie wrote to her children Braille letters every Sunday and Wednesday evening in which she told them about all the goings-on in the family. After a few years, Bert moved to Sint Henricus, an institute for the blind in Nijmegen led by priests. Ineke and Bert were no longer together which the children, and their parents, took very hard. Their parents promised them that if they were good and finished primary school they could come back home to live.

At last the time had come: the children had done their best and they had the report cards to prove it. They came home. It was an emotional event for the whole family. A great banner saying 'Home For Good' was hung from the front of the house on their return. It's difficult to imagine now but what these parents did was nothing short of revolutionary. They were the first to bring their children home. This went against all the professional advice given to them by the people at the various institutions for the blind at the time. Bartiméus and the Royal Institute for the Blind (Now Royal Dutch Visio) also voiced their concern.

Now that Ineke and Bert were back in Egmond aan de Hoef, a local school had to be found for them. It wasn't easy because neither the Wijnberg nor Sint Henricus was able to offer any educational support and there was no such thing as an itinerant special education support service. Many of the local children went to the 'gymnasium' (the Netherlands' highest form of preparatory education) in nearby Alkmaar. The children's parents decided to contact the head of the school and they received an unexpectedly positive answer: 'If a child can cope with the educational level, he will be admitted no matter what his handicap', he told them. The parents, a little taken aback, asked if he realised the problems that might arise. Undaunted, the head said he would consult with his teachers. 'I will present the case and see who is willing to take this experiment on'. A teacher was found for every subject Ineke and Bert were taught in.

They had to have books, of course. There was a library for the blind in Amsterdam but it didn't have the books the children needed. Ineke and Bert had to start the first semester without books. A women's voluntary organisation which had translated books into Braille before was approached and they set out to translate the necessary books. Several volunteers took books home with them and translated the first few chapters so Ineke and Bert could have a good start after all. Their parents often turned to the organisation, for instance for the translation of worksheets which the children couldn't read.

In those days, the government didn't provide subsidies for special educational needs. One day the postman came up the path to the house with eight bags containing a Braille version of an English dictionary. At Christmas, the grateful parents would go around the houses of the volunteers with flowers and cakes.

Growing up: Charlotte

Charlotte's school career also began at the local nursery school. Then, like her sister Ineke, she went to the Wijnberg institute for the blind. She was allowed to go home every fortnight. However in those days there were no school taxis and the Glories had to drive for hours to collect her (and her older brother and sister) and bring her back. They had to pay for their own petrol which wasn't easy for a family on a modest income.

Charlotte didn't like the institute one bit. Fortunately, after two years she could participate in a project initiated by the Royal Institute for the Blind. The project was aimed at integrating blind children in mainstream education. Charlotte could transfer to a mainstream primary school in her own village and live at home once again. She was coached by the Royal Institute's itinerant teacher Nico van Waveren. Charlotte's presence at school was a breath of fresh air. Her social character and creativity was appreciated by all. She even wrote her own songs.

Charlotte often said she didn't have the time to be a child: she was taken up by her many hobbies,

had swimming lessons, physiotherapy and musical classes. On one occasion she appeared on a television programme for children. During the interview her father produced a bottle of wine that was given to them at the time. It did Charlotte's parents good to receive the many positive reactions to the fact that their children were integrated in mainstream education and did well.
Charlotte went to the same secondary school as her brother and sister where she found they had paved the way for her. In spite of her impairment she spent a lot of time on extracurricular activities. She liked to perform in the school musicals and compiled a book of funny quotes from teachers. It was such a success among her fellow students that it went into several editions. She also did voluntary work as a radio presenter for a hospital broadcasting service.

What Ineke did

After she finished secondary school, Ineke went on to train as a social worker in Amsterdam. She did several internships as part of the course but after graduation she found that there was a glut of social workers and she was unable to find a job. Encouraged by her parents, Ineke decided to apply for a job as a telephone operator for a gas company, a job which she enjoyed doing for many years. When the company merged with another company she was transferred to a call centre. Ineke couldn't keep up with the tempo and the targets that were set there and she had to give up the job. She then worked for years for a telephone service for the partially sighted and blind in Utrecht, a job that was perfect for her. With the arrival of the internet, her job became largely obsolete and when subsidies for the service were cut back, it was abolished completely. Ineke now works for a victim support group. She is also part of a collective of volunteer tour guides who lead people around in the dark on a so-called 'Seeing in the dark' tour during which sighted people can experience what its is like to rely on other senses than sight. Ineke has lived with her girlfriend for the last twenty years.

What Bert did

After he finished secondary school Bert went on to study theology. After a while he switched to Dutch language and literature. After he had finished this course, he went back and finished his theology studies as well.

Bert spent his student days in Amsterdam where he lived at different student digs. With every move, he had to learn a new route to the university. There were no orientation and mobility classes in those days and Bert had to enlist his mother's help. She said they practiced the route several times: first a number of stops on a tram, then a couple of narrow streets along some stalls and finally across a bridge. When she told him to walk the route on his own he nearly fell off the bridge. Mrs Glorie was in the middle of giving him a piece of her mind when a man tapped her on the shoulder: 'You must be his mother', he said. This is a good example of the strict but at the same

time loving environment the children grew up in. A friend of the family once joked: 'These kids are not getting a Spartan upbringing but a Glorian one!'

Bert works for the Alkmaar diaconate at the moment.

Jan

Jan is Mr and Mrs Glorie's third child. He was born without a visual impairment. This made him less dependent on his parents and consequently he didn't claim their attention. Added to this was the fact that his blind brother and sisters always talked a lot. It wasn't until a friend noticed a pronounced stammer that his parents realised that perhaps he wasn't getting the attention he needed.

After finishing secondary school Jan went on to teacher training college. At that time it was possible to choose an alternative to doing the then compulsory national service and Jan chose to work in a Braille library where he was very welcome because he could relate to blind people. It turned out, however, that many of the blind library workers communicated in a different way from his blind brother and sisters with whom Jan shared a particular language of their own.

Jan's parents always allowed him to do his own thing, independent of the rest of the family, That is why he never regarded his blind brother and sisters as a burden. On the contrary: he enjoyed his holidays with Bert. But because he was always seen as 'the brother of ' Jan decided to move away from the village. Jan has a girlfriend and two sons. He is the head of a primary school. He started studying Pedagogy and owns a mountain bike hire company.

What Charlotte did

Charlotte stepped into her brother's footsteps and decided to study Dutch language and literature. The main reason for this was that her brother had told her it wasn't very difficult. That meant she could fit in other activities, like voluntary work for a child line. Charlotte graduated, married a sighted man and has two sighted children. She works as a stand-up comic. In one of her acts, she describes how important this is to her: 'Would you like a wife who can't do the weekend grocery shopping? I don't think so. Or one you have to come to the shops with to buy clothes? I don't think so. But in spite of all that my husband and kids love me very much'.

Olof

Like Jan, Olof was born healthy. When he was almost a year old he had an epileptic seizure which left him slightly brain damaged. He went to a special school and went on to agricultural college after that. Olof now works as an assistant bulb grower and lives in Egmond aan de Hoef, like his brother Bert. Olof acts as a home carer for his brother. He cycles with him to work on a tandem, goes shopping with him and reads him his mail.

How it was for the parents

Mr and Mrs Glorie worked hard to earn enough money to keep the family afloat. Apart from the bulb growing business, they also accommodated tourists in the holiday season. That meant the children had to move out of their rooms and into a tent in the garden. The couple was also the driving force behind a regional branch of an association for parents of blind children. Mrs Glorie looked after the children during the day and then often worked far into the night making and mending clothes.

Mr and Mrs Glorie were always clear they did not want to depend on others. That meant they didn't get much help from the people around them. There was one exception. A nun who lived in the nearby convent came by most days and became a person the Glories could talk to. One day Mrs Glorie, at the end of her tether looking after five kids, decided to take the difficult step of asking for help. The village mayor, who was also the chairman of the home help organisation, told her: 'But Madam, you look so well! And you have to realise that by asking for help you will become a burden on the taxpayers purse.' Mrs Glorie went home and burst into tears. She and her husband decided they would depend on each other to keep the family going.

There were nice moments as well, like the time when Charlotte went on a popular children's programme. Although they never meant for it to happen, the family became quite well-known and people showed their appreciation for the way Mr and Mrs Glorie raised their children.

Family life was hectic. Mr and Mrs Glorie needed time for each other as well and each year they went away for a fortnight in September. This gave them time to relax, read a newspaper without having to do it out loud for the children and generally recharge their batteries. Mrs Glorie found it very difficult to leave her children when they went for the first time but both she and her husband agree that it was the right decision to make. Their advice to other parents of blind children is to detach themselves from family life every now and again and spend time together. It's important not to have any communication with the home front for a while, they said.

Mr and Mrs Glorie intimated that their circumstances changed them quite a bit. They are happy that they managed to survive as a couple and always remained healthy and positive.

Learning new concepts

The children's parents wanted to give their children as clear a picture as possible of the things that surrounded them. They took their children to explore a tree blown down by the wind, for instance. They also stimulated them to find out what it felt like to climb a tree and to feel how big it was and what the branches looked like. Mr and Mrs Glorie also found it

important for the children to discover how the vegetables on their plates grew and where they came from . The family lived in an agricultural area so it wasn't difficult to take the children to a neighbour's field to see what happened between the sowing of the seeds and the harvest.

The family had chickens, goats and cows so knowledge about these animals was easy to pick up. The children's parents often took them out to the dunes to see how wild animals live. They showed them rabbit holes and a hare's den as well as the plants these animals eat. Every once in a while they went to the zoo. The parents taught their children about wild animals, such as elephants, monkeys and crocodiles by reading aloud from natural history books.

To give the children an idea about how houses are built, Mr Glorie would take his children to a building site on a Sunday morning. Here they could check the progress that was being made on a new estate and soon they were also able to use echolocation to determine the size of the buildings. By walking around and stomping their feet the children could tell whether a building was big or small.

Although colours remain an abstract concept for blind people, the children's parents would try to make them more concrete by linking them with objects.

Exploring unfamiliar surroundings

The Glorie children spent their early school years in an institute for the blind and naturally their parents were always happy to have them at home on visits. They didn't go to other people's homes much but when they did they let the children discover the new space by themselves. They didn't accompany them on a tour around the house, nor did they take special precautions, like covering a heater. They did have a look to see if anything was in the way, like a vase standing on the floor. They also kept an eye on the children and warned them when things threatened to go wrong.

The family didn't go on holiday together until Ineke was twelve. Going camping was not an option because of the dangerous guy ropes and the lack of reference points. That is why they always chose to stay in a bungalow or caravan. The children still don't like to go camping.

Self help skills and adaptations around the home

When asked about the ways they stimulated their children's self help skills, Mr and Mrs Glorie said they had tried to give their children as normal a childhood as possible. They had no choice, what with their hectic family life. The Glories didn't think about it much, things went the way they went, they said.

The biggest adaptation to the house were the bookshelves mounted on the walls for the Braille

books. There were bookshelves all around the house. Mrs Glorie adapted several games so she could play them with her children. Using pieces of string and matches, she adapted Monopoly and a Dutch version of Trivial Pursuit. They also made sure the flowers they bought had a scent the children would like. Ineke always loved hyacinths and freesias.

Recognising and clothes

Mrs Glorie used to explain the differences between the clothes to her children very clearly. She also taught them that some colours looked good on them, and others not. She also told them which skirt or pair of trousers went well with a particular shirt.

Ineke, Bert and Charlotte still rely on the help of others when they shop for clothes. As Bert's job requires him to look immaculate and he has no partner to help him, his mother still puts out his clothes for him. She also advises him on what to wear on special occasions.

Leisure activities

All the Glorie children were into sports. Their parents would take them to the nearby beach for running competitions. The family would split up into two teams, with mother and father each heading a team of two children. Holding a child with each hand they ran as fast as they could. They also participated in several organised hikes. Mr Glorie took Ineke and Bert on a four or eight kilometre walk while Mrs Glorie took Charlotte and Olof on the 2 kilometre variety. Mr and Mrs Glorie still like to walk. They always sign up for the annual four-day walk of Nijmegen. Bert has walked part of the road to Santiago de Compostella. Olof prefers running and often participates in half-marathons. Ineke loves mud flat walking and cross-country skiing.

Mr Glorie even took Ineke cycling, not on a tandem but on a separate bikes. This worked because the children, with their willingness to learn, could tackle almost anything. They also learnt to skate. Someone in the neighbourhood organised skating classes for children with a disability. The children weren't very enthusiastic to start with but went anyway. The organisers loved having them because they chatted a lot and showed no fear. The children still skate. Ineke is even planning a skating tour on the Weissensee.

Music is another of the children's hobbies. They were members of a choir and played several musical instruments, like the piano, the guitar and the bugle. It was quite an accomplishment as reading music in Braille isn't easy. The children still like to make music but now they play everything by heart.

When the holidays at the institute and the village school didn't coincide, Ineke, Bert and Charlotte would happily go to school with their friends. They were never bored, even during the long summer holidays. They were often roped into doing a mornings work peeling bulbs at the

Labels, buckles, and hems help children tell their clothes apart

family business. Charlotte enjoyed the work and the company of other youngsters but the others didn't like it much. Their parents would plan an outing every day. In the afternoons they would go to the beach or the swimming pool. The children loved to sled down the sand dunes. Each parent would take a child on his lap and down they went. During the shorter breaks later in the year, when

it was colder, they would spend time indoors baking cookies or doing a handicraft activity. Sometimes the family went on an outing to Amsterdam where the children wandered around the toy department of a big store. They loved it! Mrs Glorie would always ask the staff at the store for permission.

When the children were older they would take on holiday jobs, just like all the other youngsters. Ineke worked at a tourist information office and Bert worked at a big department store as an announcer. He also worked for a gas company where his job was to inform the repairmen of technical problems and put through other calls. He was one of several blind people in the job.

Additional tips

Fun activities

The Glories think sports was one of the most enjoyable activities for their children.
They feel inactivity breeds passivity and that's why they always insisted the children be active.
The children also enjoyed reading their Braille books and listening to talking books.

Arranging the bedroom

The children's bedroom were nothing out of the ordinary. Ineke decorated her room with some sayings in raised relief letters and Charlotte had lots of cuddly toys. When the children were a little older they each had their own hi-fi system.

Handicrafts

Mrs Glorie used to collect tactile material, like shells and dried flowers for the handicraft activities. She thinks that the modern handicraft shops have a good selection of materials.
When asked if her children ever used German foil she said her children didn't like it very much. They only used it during maths classes.

Presents

Mr and Mrs Glorie said that on the yearly outing to the Amsterdam department store each of the children would choose a toy they liked. That would be their birthday or Christmas present.

14 Useful tips at glance

14.1
Introduction

In this chapter we have made a selection of the practical tips and suggestions in part B of the book and those provided by the parents. The general rule is: don't be shy. If you see someone wearing an interesting outfit, walk up to him or her and ask if your child can have a feel. People usually don't mind and your child will have had another fun and educational experience.

14.2
Stimulating tactual development and conceptualisation

Choosing materials

A playpen mat, or a toy made of different tactile materials stimulate tactual development. Haba and Lamaze offer a wide choice of materials but you can also get creative yourself and make your own. For more information go to **www.kidikado.be**. Shops specialising in wooden toys are especially inspiring, not only because of the wonderful quality of the toys but because many blind children like this particular material.

Touch and feel boxes

A touch and feel box can contain all sorts of materials, such as pieces of fabric, chestnuts and acorns. This helps your child to understand that different things feel differently. You an also put every day objects in the box.

Becoming aware of hands and feet

Attaching a little bell on a sock or putting a bracelet with a bell on your baby's wrist will make him become aware of the position of his hands and feet. He will then start to reach and grab for them.

Tactile drawing boards

The earlier versions of tactile drawing boards were too cumbersome for small hands but since then good alternatives have become available. Tactile drawing boards improve fine motor skills and stimulate the imagination. Primary schools use them to help children to learn how to draw fine lines and graphs. At **www.tactileview.com** and **www.aph.org** you can find out how to turn drawings into raised relief images using a Braille printer. Talk to your child's early intervention coach about which drawings might be suitable for printing.

Putting away the groceries

Putting away the groceries can be turned into a spatial skills game: What can you find on the next shelf up? Which things are standing next to each other? Which are in a vertical row? Blind children in particular like to experience where their food was before it ended up on their plate. Street markets and supermarkets are great places for discovering different fruits and vegetables. If you ask, the fishmonger may let your child explore some fish.

Arranging the bedroom

Instead of posters you can use foam Disney figures to decorate the walls. Many children like to have a shelf on which they can put small objects they like to explore.

14.3 Play

Safety and security

Put your baby in different positions on a mat. Babies like an enclosed space, so use cushions, a play ring or a playpen to increase the child's sense of safety.

Preventing material from rolling away

It is always annoying when things roll away and fall on the floor. It is a good idea to attach a strip of wood to the sides of the work surface so toys and handicraft material don't roll off. Containers and a tray with high side walls are also useful. You can also make your own tray using a piece of plywood and attach draught strips to form an upright edge. An anti-slip mat prevents toys from sliding. It is useful to have at home but also when you visit a friend.

Using a cloth

Blind children do not like to feel glue or other sticky materials on their fingers so have a cloth at the ready during handicraft activities. Sticky fingers prevent them from exploring properly.

Playing with old curtains or carpets

Old bit of fabric make great play material. Put your child on an old curtain and pull him around the room. This offers lots of possibilities to try out different body positions. Carpets make good tents too and the child can experience whether or not he fits into it. You can invent all kinds of fantasy games with this material (see Chapter 8 of part B).

14.4 Leisure activity

Organised leisure activity

Examples of organised leisure activity are: gymnastics for toddlers and pre-schoolers, dancing, scout clubs, skating, music lessons and chess clubs.

Leisure activities at home

Second hand dressing up clothes are widely available. Grease paint make-up becomes tactile by attaching things like feathers, macaroni or sequins using skin adhesive.

Holidays

Some countries have agencies which specialise in holidays for the blind.

Smell and Taste routes

Some gardens organise smell and taste routes for the blind. Search the internet for one near you.

Zoos and children's farms

Some zoos have life size models of some animals or a collection of stuffed animals. Of course it is much more thrilling to feel a real animal and some zoos allow this if you make previous arrangements. Find out what's possible at your local zoo.

Out and about

Collect stuff from nature when you and your child are out for a walk, like leaves, acorns, chestnuts and small stones. He can then have a closer look at them at home and perhaps glue them onto the pages of a notebook. In that way you create a storybook about the exciting things that happened on the walk.
Climbing trees and exploring fallen trees to experience how tall they are is a special treat. The beach is a good place to run (together) and roll off the sand dunes. You can also explore rabbit holes, bunkers and plants.

More outings

Following the progress of a building project helps to give children an idea of how houses are built. The DIY store is an excellent place to explore tools, roof tiles, nails and toilet pots. Another good outing is a visit to a music store. Ask the staff if your child can explore the various musical instruments.

Memory lane

Put some of your child's baby clothes and toys in a touch and feel box. In this way you create the tactile equivalent of a photo album.

14.5 Promoting self help skills

Pouring

Tell your child to put a finger in the cup and pour until the liquid touches it. The best place for learning how to pour is the sink, a washing up bowl or a deep plate. You can also buy liquid level indicators which can be clipped onto a cup and beep when it is full **(www.independantliving.com, www.rnib.co.uk)**.

Operating household appliances

Bump-ons are small plastic circles that can be stuck on an appliance to indicate settings and functions. Available at **www.worldwidevision.nl**, **www.rnib.co.uk** and **www.independantliving.com** or under the brand name Tesa at DIY shops.

Dressing and undressing, recognising clothes

Dressing and undressing is easier sitting on the bed or on a small chair in front of it. Position the clothes in such a way that your child can put them on straight away. Older children can use a label reader to identify their clothes. A bead or a piece of string attached to the zip makes it easier to locate. Satin and silk duvet covers and pyjamas are nice and soft **(www.coconelle.com)**.
Take your child to the shop and let him try out the fabrics first.

Visibility

A cane, a button or a neon pink vest (available at a bike shop or Ikea) with the words “I am blind’ will increase your child’s freedom of movement. The other children automatically keep their distance because of the vibrant colour which tells them there is really ‘something the matter’ while the parents can read the words and explain them to their children.

Moving

Use Lego or Playmobil to explain the new house to a small child and make a floor plan on swell paper for the older ones.

15 References

15.1 Websites

Toys

www.rainbowtrampolines.nl:
Trampolines with support for young children
www.toys42hands.nl:
Toys to stimulate two-handedness
www.kidikado.be:
Attractive, affordable toys (Belgian website). Also stocks Voel de vorm (Feel the shape)
www.platotoys.eu:
Soft toys, like Rubbablox, wooden toys and click cars
www.elmoverlag.de:
Touch games (German website)

Talking books

Available from bookshops or intranet

Tactile books

www.visio.org/tastboeken picture books with tactile illustrations, picture books published by Lemniscaat
RNIB **www.rnib.org.uk** in the U.K.
APH **www.aph.org** in the U.S.A.
Les Doigts Qui Rêvent in France
www.ldqr.org
Libri Tattili Pro Ciechi in Italy
www.libritattili.prociechi.it
Lynette Rudman in South Africa
www.tactilegraphics.co.za

Websites for parents of children with a visual impairment

Check the internet for a parents' association near you. Products for people with a visual, auditory or reading impairment can also be found on the internet.

15.2 Books for parents of children with a visual impairment

- Children with visual impairments, A parents' guide, Edited by M. Cay Holbrook.
- Playing is growing, Royal Dutch Visio, Centre of Expertise for blind and partially sighted people in the Netherlands, **www.visio.org**. This book describes the different stages in the play development of blind and partially sighted children.
- Langage Flottant, Clara Linders. Available at Les Doigt Qui Rêvent **www.ldqr.org**
  Clara Linders, **www.visio.org**

16 A glossary of terms

Auditory
Relating to perception via the sense of hearing.

Cognitive skills
See Information processing capacity.

Conceptualisation
The ability to form mental pictures of the surrounding world and master the contents of words that refer to it.

Congenital
Present at birth.

Cutaneous
Relating to perception via the skin.

Dominance
Preferred hand: left or right handedness

Dynamic hand
The hand that performs the main actions during a two-handed activity (for instance when cutting something: the hand that holds the scissors).

Executive skills
Planning and performing skills

Explore
Investigate, discover

Fixating hand
The hand that holds the object during a two-handed activity. Also called the supporting hand (for instance when cutting something: the hand that holds the paper)

Floating language
Coming to the wrong conclusions about the contents of a concept because you do not have enough information about it. Also called 'verbalism' in blind children.

Haptic
Relating to the sense of touch

Hemispheres
The two halves of the brain

Information processing capacity
The ability to absorb, process and interpret information (knowledge).

Kinesthesia
Awareness of the position and the movement of the parts of the body

Lateralisation
Localisation of function on either the right or left sides of the brain. Lateralisation also results in the specialisation of motor tasks. Before the age

of six a child uses his hands and feet equally and has no conception of left and right. From about the age of six an 'allocation of tasks' between the hands develops: one hand acts, the other assists.

Manipulating
Handling an object with both hands accompanied with fine finger movements.

Midline
An imaginary line which runs from the nose to the navel dividing the body into two equal halves.

Modality
A way of acquiring and processing knowledge.

Motor planning
The ability to plan a sequence of movements.

Neurological
Relating to the nervous system

Perception
The act of perceiving (by means of the brain); becoming aware of, processing and interpreting a stimulus that has entered via one of the senses.

Performance
Relating to action.

Propricoception
Deep pressure built up from information from the muscles, tendons and ligaments.

Reference point
An indicator meant to help a child get his bearings during a task.

Synthesise
To bring together to form a whole

Sensopathic material
Material which is interesting for its sensory qualities. Sensopathic materials are shapeless and appeal to the sense of touch: sand and water, clay, dough, shaving cream, finger paint.

Sensory
Relating to sensory perception and the processing of stimuli.

Sequential perception
Perceiving stimuli one after another.

Stereognosis
The ability to recognise a subject by exploring it with both hands.

Stimulus
Sensory systems code for an impulse that influences the sense of touch.

Tactile defensiveness
An extreme reaction to touch. Children who suffer from tactile defensiveness prefer not to be touched and avoid the act of touching.

Tactual language
Describing concepts in terms of what they feel like to the touch (for instance ribbed or square)

Touch strategy
A way of tackling a tactual task as efficiently as possible.

Temporal sequence
An order of succession in time.

Texture
The tangible structure of a surface (for instance ribbed, lumpy or smooth).

Tonus
Muscle contraction

Verbal
Relating to speech

Visualise
Conjuring up a picture in the mind based on a verbal description, or from memory

Appendix
Rules for adapted games

Rules farm game

The farm game is a tactile version of the game of the goose. You can adapt the theme of the game according to your child's preferences. You can make the game about shops, the playground or a fairytale wood

- The youngest player starts.
- If a player comes to a square that is already occupied you must go to the one directly preceding it.
- If he finds himself on a blue square he must perform a task.
- If the die roll results in a question mark the player must take a card with a question mark from the top of the pile and answer the question on it. The right answer will earn him another throw and he gets to keep the card. If the answer is wrong the card goes to the bottom of the pile.
- The first player to get to the finish earns ten points. The second earn 5, the third 4 and the fourth 0
- Every question mark card is worth 2 points.
- The player with the most points wins.

Instructions:

1 Very good: you helped milk the cows, roll the die again!
2 On the trot: move two places.
3 Oh no, you fell into the pigs' mud pool. Skip one turn to have a shower.
4 Don't dawdle; move forward two places!
5 The tractor is broken and needs a new tyre. Skip one turn to take it to the garage.
6 You have given bread to the hungry geese. Thank you! You may roll the die again.
7 How nice of you to wait for your friend. When he arrives on your place or passes you, you can move forward again.
8 Thanks for helping the farmer get his potatoes in; move forward two places.
9 Move forward as many places as there are sheep.
10 You fell asleep in the haystack! Skip one turn.
11 That's lovely; you found some eggs and had an omelette. That will give you enough energy to move forward two places!

Idea and description: Els Smith, Royal Dutch Visio

How to make a goose board game

- Take a wooden board and set out a route made from bottle tops.
- Paint the route red.
- Put some artificial grass along the route with double sided tape.
- Make a pond and a potato field, a mud pool and a haystack from papier maché.
- Buy animal figures and trees from the toyshop.
- Glue the figures onto the board.
- Give all the play pieces different tactile characteristics.
- Glue small raised relief dots (available at the DIY shop) or bump-ons and a tactile question mark onto the die.

Rules Smurf game

The goal of the Smurf game is to get as many Smurfs as possible to the safety of their homes. The player who saves the most Smurfs wins.

- Put all the Smurfs in Gargamel's cage in the middle of the board.
- Every player chooses a mushroom house.
- The youngest player starts.

- The Smurfs can leave Gargamel's cage on one side. The starting square is a flower.
- Every player moves his Smurf according to the number on the die. If the place is occupied already the player proceeds to the next square.
- All players can move all Smurfs: every player is trying to get as many Smurfs as possible into his house.
- In order to get a Smurf into his house, the player must roll the number of squares between the Smurf and the house, or more.
- Once the Smurf has safely reached a house, the other players can no longer touch it.
- If a player rolls a one he has to answer a Smurf question. The right answer results in another roll of the die.

The Smurfs meet with a number of obstacles on the way.

- **A salsaparilla leaf:** this is the Smurf's favourite snack. Roll the die again.
- **A noose**: Gargamel has caught you again. Go back to the cage.
- **A trap:** You've been caught in Azrael's trap. You can only leave if one of the other players rolls a six.

The winner is the player with the most Smurfs. HAVE A SMURFING TIME!

Materials needed to make a Smurf board game

- A wooden board
- Paint
- Smurf figures
- A wooden cage (you can make this yourself)
- Mushroom houses (you can make these yourself)
- Flowers: available from handicraft shops

Idea and description: Els Smith, Royal Dutch Visio