

# SEEING BEYOND

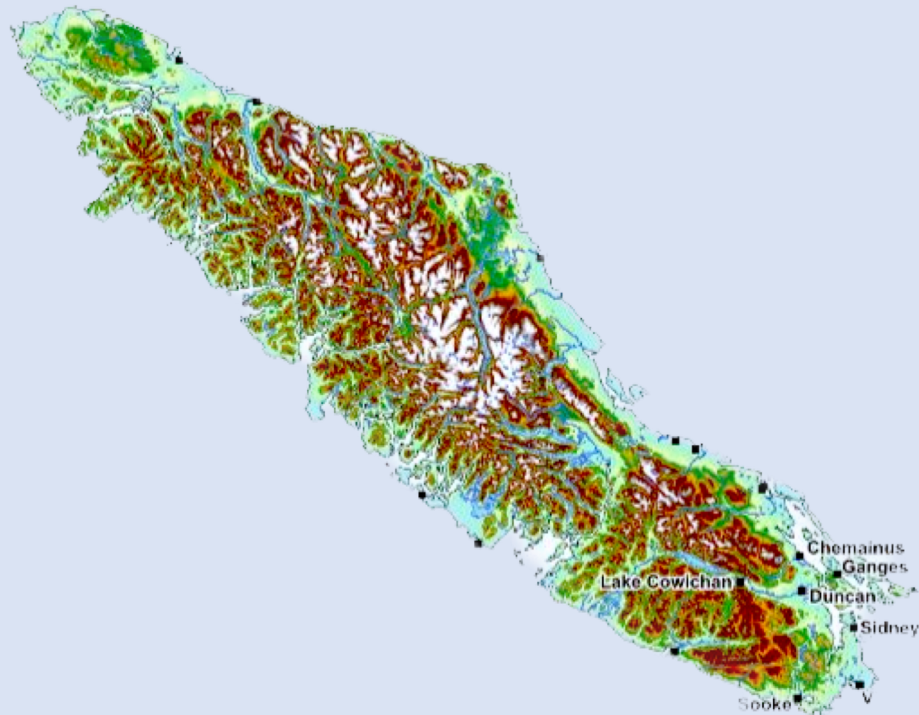
Creating spaces, routines and curriculum that support children who have visual impairments

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BCACCS Spring Conference  
April 1, 2023

# Presenters

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# Presentation outline

- What is a visual impairment?
- Importance of touch and other senses
- Creating a rich tactile space
- Meaningful routines
- Let's make a tactile book
- Commercially available books – story boxes
- Resources
- Q&A

# Creating spaces for learning... the goodness of accessible spaces

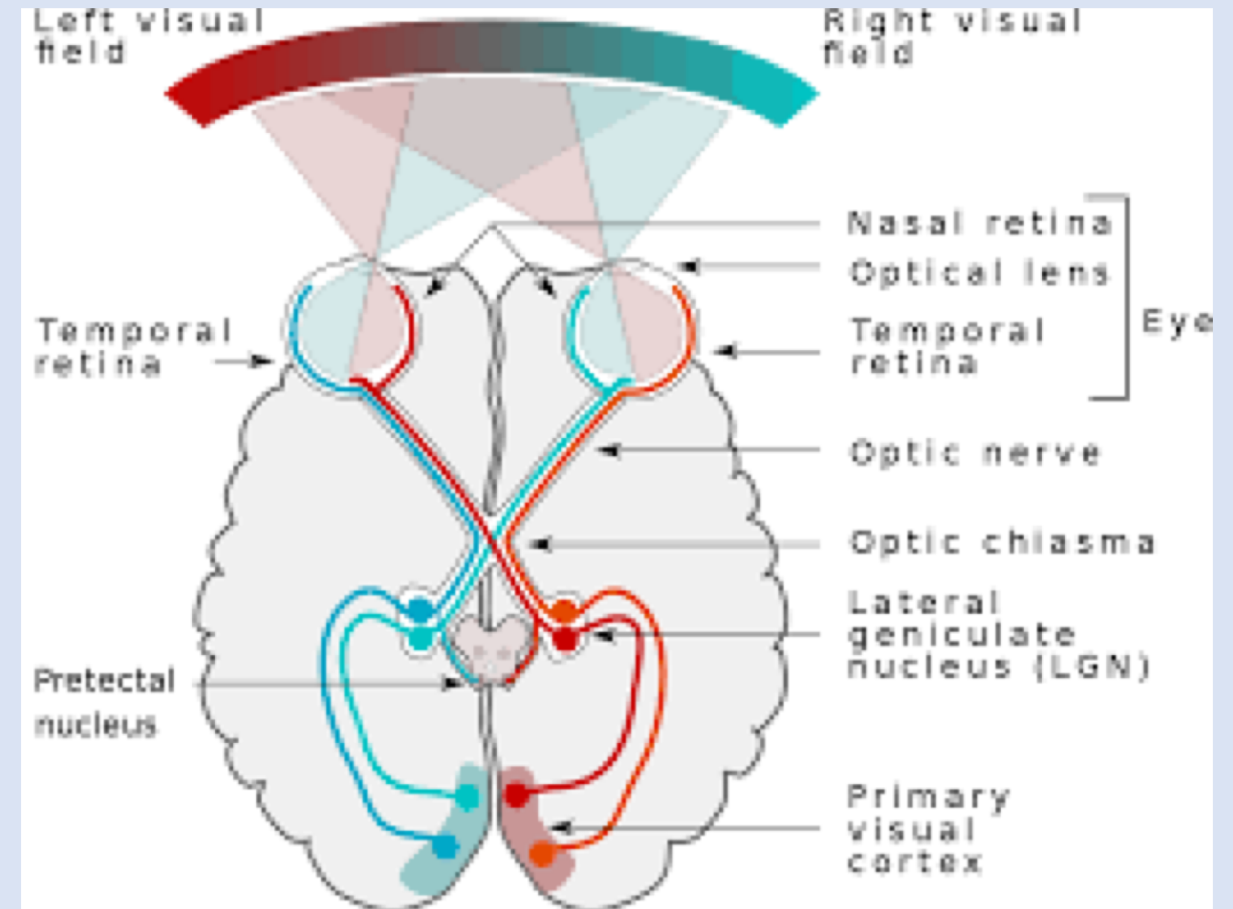
- learning happens when there is a good fit between the individual learner and their learning environment.
- interplay between the profile of the child and the child's learning spaces.

Let's talk about the child's profile – what do we mean when we say a child has a visual impairment?

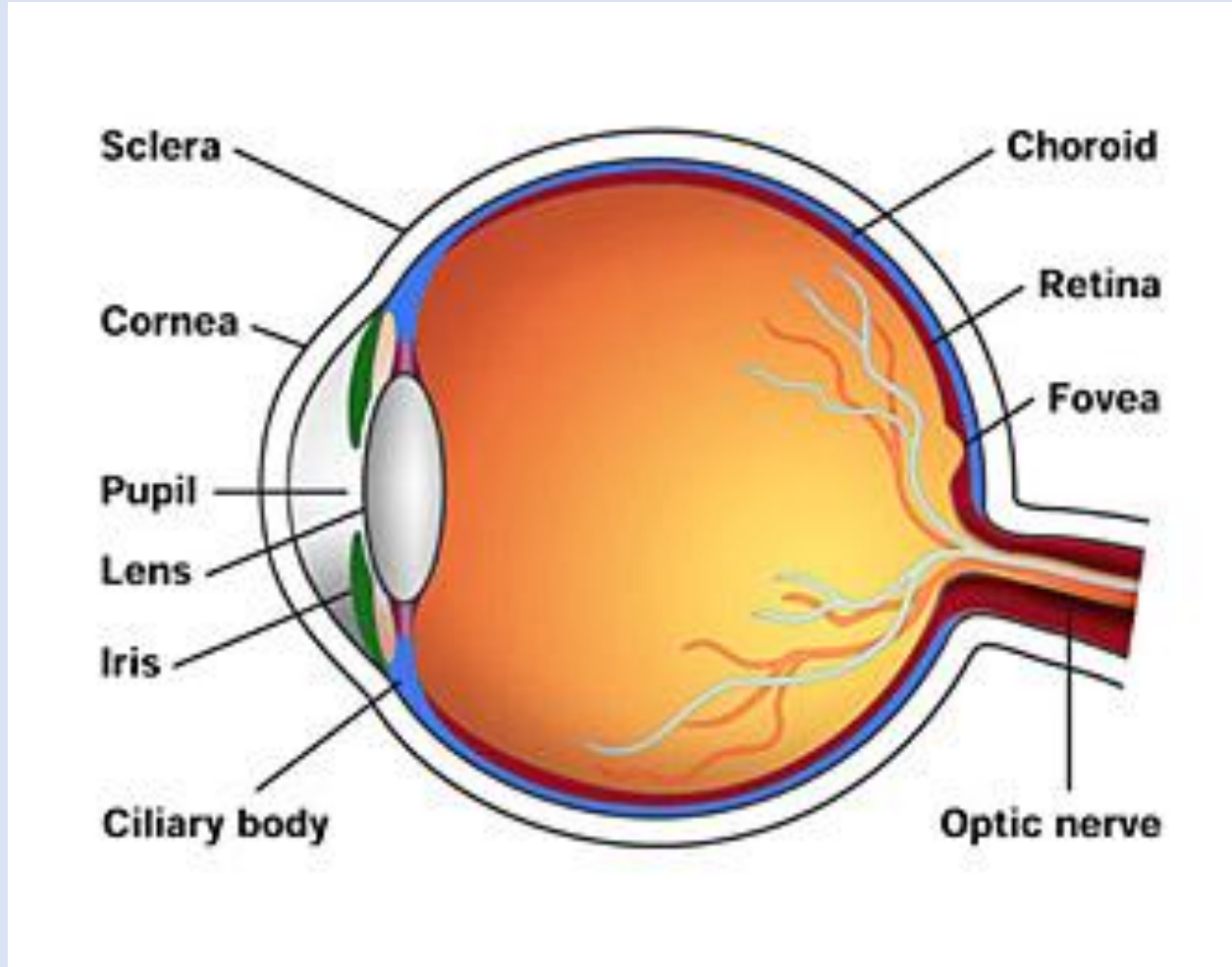
We'll start by looking at the visual system.... what is the process of seeing?

# Process of seeing: many points in visual system

- More happening in the brain
- The eyes are a housing in which light focuses on light sensitive cells that capture the information and transmit it to the brain through electrical impulses
- The brain is where the act of seeing happens.
- This diagram shows that there are overlapping visual fields, these fields allow us to see depth.
- The eyes each are devoted to half of the visual fields.
- The primary visual cortex is where vision is developed, but the whole of the system is essential.



# Cross section of the eye



- Magnification: cornea and lens
- Photoreceptor cells: retina, macula
  - colour vision, rods

# Simulating vision loss



# Understanding visual functioning

- Visual acuity is the measurement for the sharpness or the clarity of vision. It is represented by a fraction.
  - 20/80 – someone can see at 20 feet what someone with typical vision sees at 80 feet
  - 20/250- someone can see at 20 feet what someone with typical vision can see at 250 feet
- Visual field – the entire area where you can detect changes in the surrounding environment, such as movement which can be seen to the front, sides, above and below without moving the head or the eyes.



# What is a visual impairment

- Visual acuity of 20/70 (6/21) or less in the better eye after correction
- Visual field of 20 degrees or less –
- Any progressive eye disease with a prognosis of becoming one of the above in the upcoming (near) years.
- A visual problem or related visual stamina that is not correctable and results with the child functioning as if their visual acuity is limited to 20/70 or less

Take away... visual impairment determined by acuity, field, prognosis and functioning. Determined by the vision in the better eye AFTER correction.

# Vision allows us to gather information

- In our world the majority of people gather information in a similar way, but what if you need to see beyond this....
- Vision loss could impact
  - Concept development - lack of concrete experience may limit awareness and development
  - Interpersonal communication skills - difficult to understand 'they' are different, social cues
  - Life skills - visual nuances and actual skills
  - Orientation and mobility skills – motor development delay, less ability to move about own environment (constantly reinforcing these skills)
  - Academic development – many things within the world are beyond their comprehension –a flame, a mountain, airplanes.

Our children are often unable to learn by imitation or observation;  
main channels of learning for children

# Visual impairment affects the whole process of information gathering.

Far too often we expect blind or visually impaired children to base their knowledge of the world on verbal descriptions and very limited “hands-on” experiences.

Let’s talk about the foundations of touch...

- touch is a proximal (near) sense
- one of the most direct forms of perceptual experience
- haptic perception – process of gathering information through touch (specifically, recognizing objects).
- Ability to combine information to create a whole mental image.

Instinctive - touch is the first sense that a baby has with its parent  
Touch is foundational

Touch is not a 'replacement' sense, or an automatic sense that develops when a child is blind or with partial sight, but integral part of building information that needs to be fostered

3 important considerations

- Touch needs to be intentional; sometimes that involves us setting up opportunities
- Provision of touch items needs to come with explanation, commenting, linking of similar concepts / qualities / experiences
- TIME, multiple opportunities to 're-experience' and opportunities to experience within a different setting or location

# Get out and explore!

- Young low vision and blind children need families and professionals to provide intense stimulation, motivation and movement.
- If not actively engaged in experiences and exploration at an early age, information gathering is passive and they cannot fully develop their sense of touch.
- Concept development is closely linked to multiple experiences of the same routines



# Touch and touch+

- Bridging gaps of understanding; there is just touch, but more importantly there is touch +... model through description and when the child does the same acknowledge them by saying, “I like how you told me that the ball is squishy and big.” Extend the learning to comparing this to something else that has the same attributes or maybe something that is opposite like the little hard golf ball.
- Building concepts through touch. Example of a spoon – a huge concept – from cutlery, to serving, to cooking utensils or the concept of a ball; size, shape, texture, and how that word is used so differently in our language
- Don't need to plan but to be open in the moment, interactive, and proximal, at hand's reach



# What is associated with touch?

- NAMING those concepts, qualities or attributes
- Resource: [Adjectives That Describe Texture - The Classroom](#)
- temperature, size, shape, resistance, texture, elasticity, hardness, sharpness, thickness, weight...
- What about 'orientation' – understand that the orientation of an object can change its touch meaning; think about how a cup feels when it is holding milk, compared to how it feels when it is put into the dishwasher... or how a boot feels when it is stepped on compared to a boot in a drying rack.

Tactile learning, simple takes more time:



# What about reluctance to touch?

- Providing a safe place to touch things – maybe it is in a sensory box, or sitting with a parent in a big comfy chair, or during bath time. *A place where they feel secure, and in control.*
- Help by voicing the anticipation of touch occurring. Inviting the child to touch what is familiar, such as the parent, before having to touch something that might unfamiliar – exploring things together, with the child, not for the child.
- Providing a ‘ride’ for the child to touch, while going for a ride on the back of your hand, with their fingers laced down in between your fingers.
- Touch does not need to be limited to hands, it can involve other parts of the body – under wrists or elbows

# Developmental stages of touch

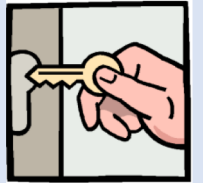
- Focus here is on touch with our hands
- Fine motor; palmer, pincher, finger isolation, reach and release, rotary motion, bilateral hand movement, finger and hand strength, posture
- Using both hands together
- Gross motor movement with hands, arms, upper body...
- Importance of posture - initiate expectation of good posture in the early years...



# Levels of learning with touch



- Structure and shape
- Part to whole relationships – a key into a lock, cereal into a bowl
- Awareness and attention to attributes
- Moving from 3-D tactile exploration to reading braille is a process that follows this progression:
  - three-dimensional forms (real objects)
  - flat shapes, such as puzzle pieces
  - embossed shapes with the entire area that is raised
  - raised outline shapes and raised lines
  - braille letters



# Take-aways on touch

- Intentional
- Proximal - within reach
- Touch PLUS – providing those descriptors
- Time – opportunity to re-experience in same and different settings



# Meaningful exploration of tactile rich spaces

- Typically sighted children learn through incidental observation of others
- Typically sighted children learn by seeing the WHOLE of the space or object and then focusing on the parts.
- A child with a vision loss learns through direct, concrete experiences
- Visually impaired children are first drawn to a PART of the whole
- Concept development - how does the child with a visual impairment come to know about their world? Tactile strategies --- intentional, repetitive, meaningful routines

Goal is to build independence into routines and movement around know space. Confidence and problem solving in safe places.



Be intentional - create opportunities for our children to come upon tactile cues, including braille, as they go about their daily routines

- Room identification
- Cubby space and coat hook - choose a place that the child can learn to find on their own: end of the row.
- Together with the child create a distinguishing tactile cue
- Be consistent
- Help the child learn to use permanent information (landmarks) in the space to guide them: windows, carpeting, teacher's desk, sink

How do we create opportunities for our children to come upon braille? Using a braille labeler, or braille with clear sticky back paper, braille up your space. Where there is print, add in tactile cue or tactile braille

# Creating working areas within table space

- Space needs to be defined for our children
- Simple means – trays, baking sheets, tape & string,
- Consistency with seating
- Organization of books, bins and resources....labelling that is recognizable

IMPORTANCE of changing things up!

Variety is the spice of life...

- Prepare, pre-teach, predict, practice



# Out and about - exploring

- Typical vision observes. They use general rules and strategies for safer more effective travel
- Our children rely on systematic skill development and careful analysis of sensory clues. Multiple opportunities to understand travel.
- This is NOT intuitive but a learned skill for visually impaired kiddos and visually able children. Visually impaired children require active intervention to develop this skill not passive observation.
- Body awareness, directional concepts, up/down, left/right... how things in their environment are positioned to them.
- Understand the language of space – between, beyond, below, behind...

# Plants in Places

- Plants can let us know where we are in places we know well. What plant could be by the sandbox?
- What about the water table?





# Cluster Planting





# The Whole Process





# Vary textures and materials on walking surfaces





Consider the impact of shadows, especially when walking on differing textured surfaces.

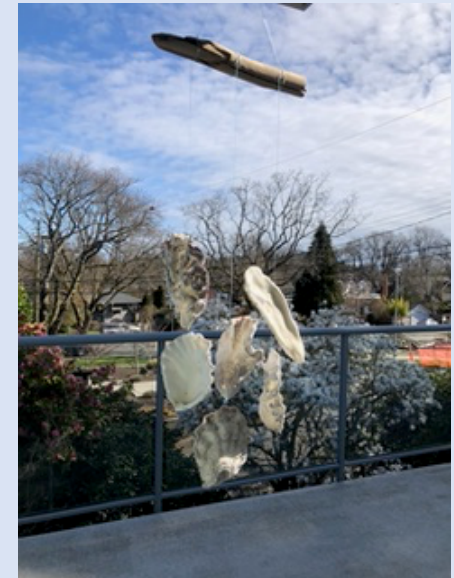


# Create soundscapes

- What sounds do the plants make when the wind blows?



- Creating soundscapes with natural windchimes



# Doing WITH not for...

- If language is not an effective prompt for the child, consider hand under hand guidance... going for a ride on my hand
- Demonstrate rotation of adults hand into child's hand, when object is being introduced.
- Puts the child in control of the interaction and allow for more gradual introduction of different tactile experience – allows the child to lift off or disengage at any point of the activity.
- Hand over hand may be effective for child with limited hand use, but careful, respectful consideration is essential, ask permission



# Routines

- Functional purpose
- Object or tactile cue – building towards independence
- Child is involved from the set-up to the clean-up: avoid the good fairy
- Supporting the routine with language
- Purposeful use of hands, and body
- Positioning – think about purposeful use of vision, hearing and other senses
- Use of gross motor, mobility and fine motor
- Motivation – meaningful, what aspect of this routine does the child love? FUN!!

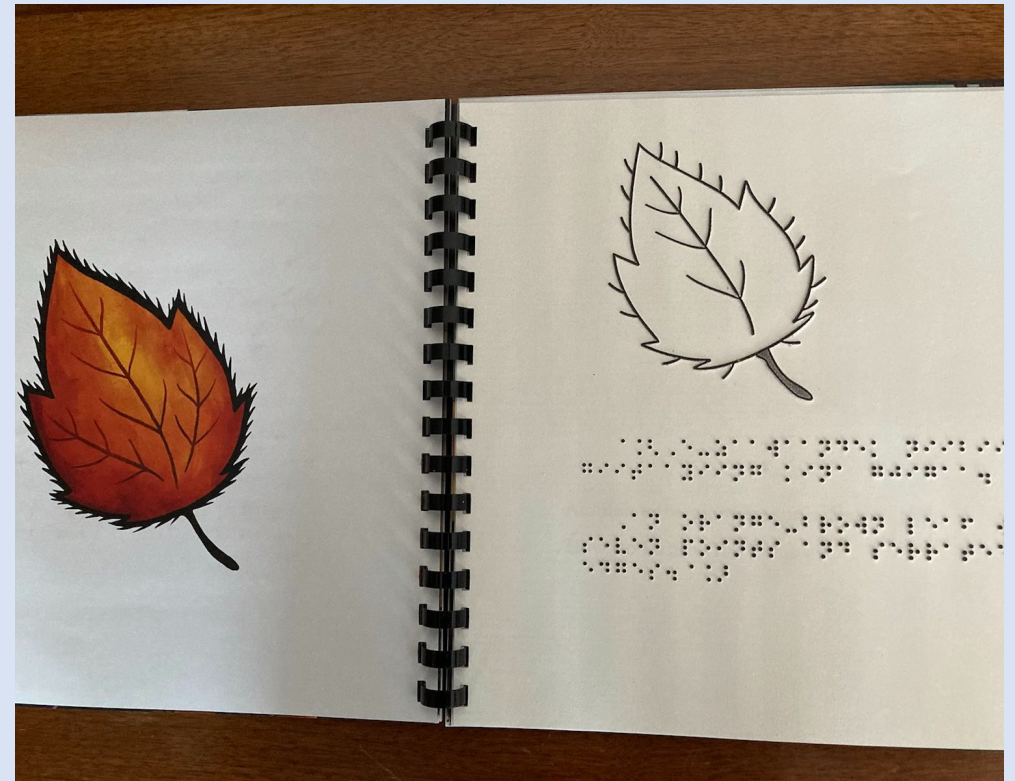


# Let's make a tactile book

Books need to be interactive, predictable, motivating. Reading opportunities need to be intentional.

Tactile graphics add interest

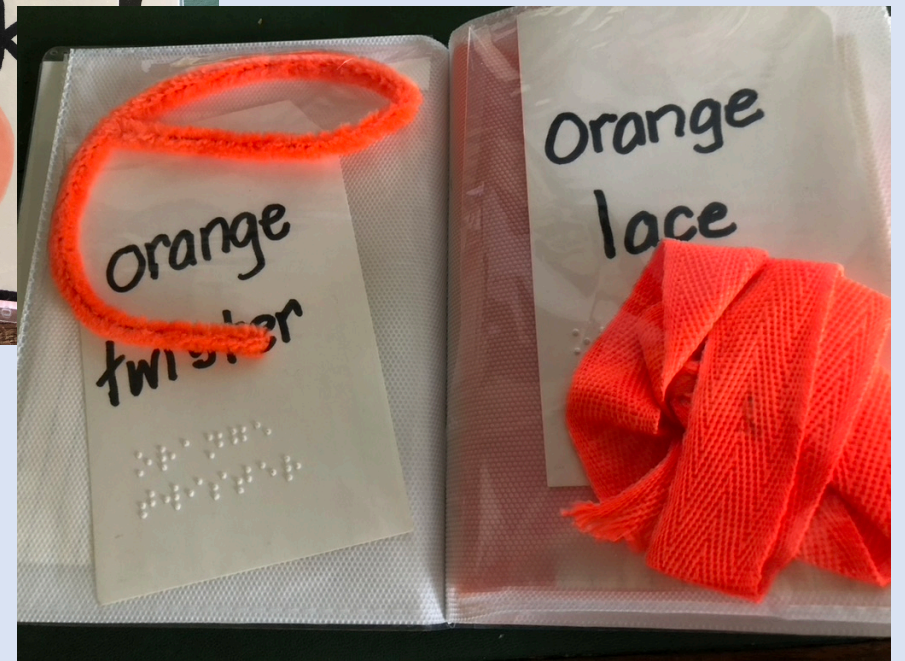
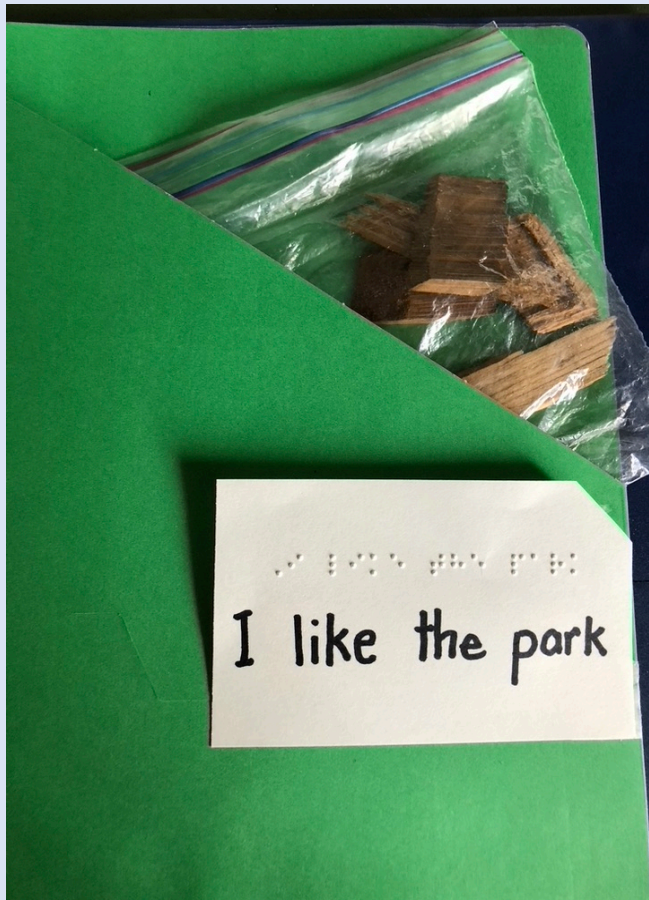
Books, books, books



# In my bucket! Bringing the outside into a book

- Go for a walk, put some things in your bucket and come home to write a story about it.
- The story can be on a theme or concept such as big and small, numbers, (1 feather, 2 stones, 3 leaves, 4 pinecones etc.), smooth and rough, be imaginative!
- The shapes can be 'attached' into the book by popping them into a zip lock bag and taping the bottom of the bag to the left edge of a cardstock page. The bag then opens on the right side of the page and the item can come out to be talked about.
- Add labels either braille or large print, on the outside of the ziplock
- Don't forget a title and the child's name





# All About Me

Who is the most important person here – the child. They have lots they know about themselves. Make a book that is predictable and easy to read. There are many book templates online.

But a good start is to talk about family.

- I have a brother, I have a mom, I have a dog
- I live in an apartment, I live on a street
- I like Lego, I like chips, I like ...

Be sure to add in meaningful tactile pictures. Brother, might be a toy car, mom might be a piece of fabric. Apartment might be a key – let the child choose.

Use accessible format – large print and / or braille

# Repeated line books

ALWAYS base your repeated line on something that is familiar to the reader. Building on language experience. I borrow shamelessly from

- already existing patterns. For example, Brown bear, brown bear, can be substituted for Fishy cracker, fishy cracker.... Building off of snack time can be both a literacy and a food experience.
- Build these books with the child. Talk about things they can do...such as clap, hum or hop, jump, run, sing, etc. Or it might be places they go; to the dentist, to the library, to the McDonalds, to the mall, etc.
- Don't forget to add pictures to your books – things that make the words meaning... this needs to be done with the child.

# Building and using Story Boxes

A Story Box is a collection of items in a box, a bucket or a bag that corresponds to like items mentioned in a story. Purposeful exploration of concrete-real objects enhances the story book experience.

Choose a story that:

- talks about objects and concepts that are familiar to the children
- have items that are readily available
- does not rely on visual experiences or pictures to provide meaning to the story
- repeated line books work well



# Building Story Boxes

- Using commercial produced books such as Give a Mouse a Cookie, create a story book bag of objects
- select corresponding items; dollar stores can be a good resource or collecting familiar objects from your household
- label the exterior of the container. A tactile representation of the story will enable you and your child to "read" the title; e.g. 4 big buttons glued to the box, for *Pete the Cat and His 4 Groovy Buttons*



# Books for Story Boxes

## Read the Story:

- you might want to ‘preview the story’ by exploring the items in the box before you initiate reading or,
  - as you read the story give the children the items being discussed, in sequence
  - allow ample time for the child to handle and figure out what the shape is through tactual exploration
  - you do not need to present all the items in the box with each reading
- Hands-on experiences with real objects help to provide meaning to words and help develop concepts.
  - Book selection and ideas can be found at Paths to Literacy <https://www.pathstoliteracy.org/storybox-ideas-norma-drissel>

# Materials needed to make books

- Laminated cardstock, slash-pocket 3 hole inserts, self-laminating sheets
- Small binders-one inch, or even the memo size (with cut down pages) or if available, use coil binding, \$\$ store photo albums (top load)
- Braille using sticky backed clear adhesive or Dymo tape use tape insert in your braille or braille label maker
- Velcro coins, foam stickers, sticky backed felt, be creative – felt for furniture, cupboard cushions, hardware textured tape, wallpaper samples, fabric, wikki-stix





# Braille Bites

**Bite-sized recipes for big fun and early skill development in braille reading and writing!**

[Braille Bites](#) is a series of videos and resource guides for anyone who is supporting blind and low vision learners to explore and gather information about their worlds using the sense of touch.

Each episode is a short video presented in the style of a cooking show with each activity written as a recipe!

[Videos and resource materials](#) from our first season are available, as well as how you can connect with us on social media via [Twitter](#), [Instagram](#), and [TikTok](#).

# Commercial Resources

## Library Services

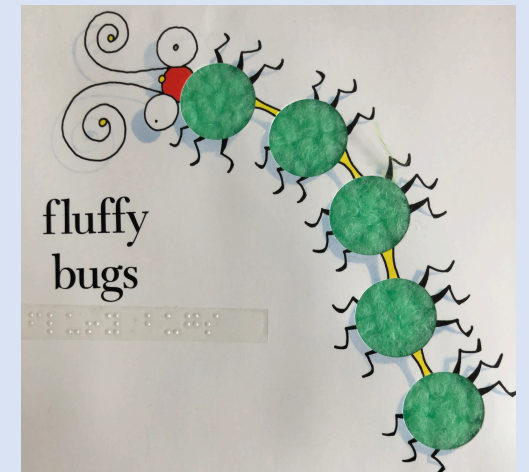
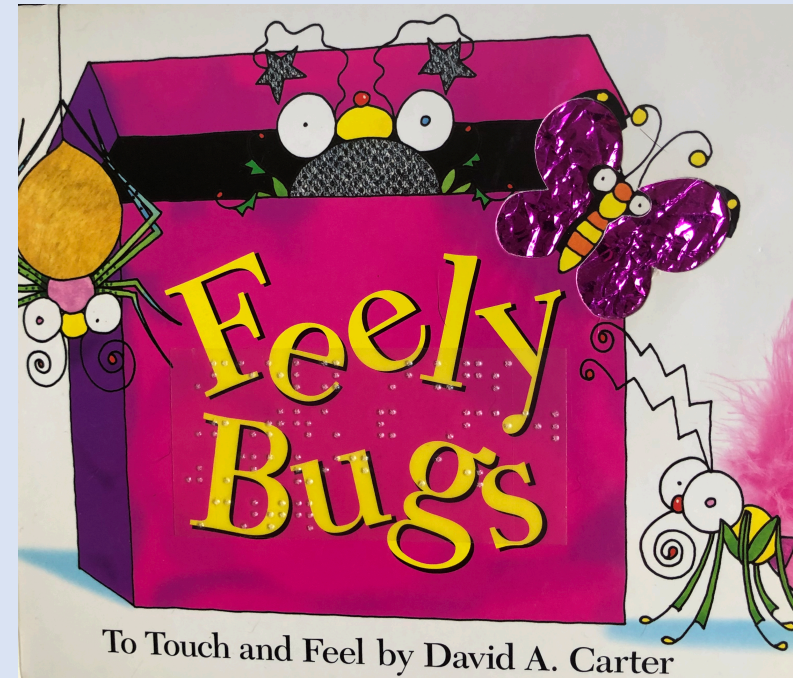
- CELA – [register](#) Books are delivered to the child's home. Dual media, preschool selection.
- Vancouver Island regional library



# Commercial Resources

## FOR PURCHASE:

- Groundwood Books: [This is How I Know](#)
- KidsCanPress: [My City Speaks](#)
- Mainstream bookstores: [DK Braille board Books](#)
- Many more titles of braille-print books available through [Seedlings](#)



# BC Resources for support services

[Blind Beginnings](#) Supporting children and families. Through educational and experiential workshops, early early years, pre-employment training, summer camps, recreational activities and individualized counselling, Blind Beginnings offers these youth opportunities to develop skills, confidence and independence.

[Children's Low Vision Project – BC](#) CLVP-BC brings together professionals trained in Ophthalmology, Optometry, Orientation and Mobility, Access Technology and Education. The team evaluates each child, prescribes and dispenses low vision devices, and makes recommendations to support the child, their family, teachers, schools and other professionals working with the child



Provincial Resource Centre for Visually Impaired – [PRCVI](#)

Provides learning resources, leadership, information, training and consultation to support school districts' goals of equitable access and enhanced educational opportunities for students with visual impairments.

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