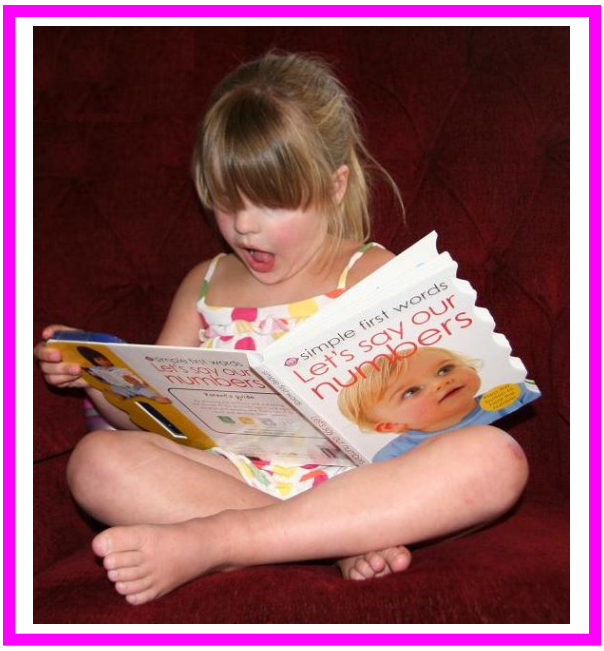
EARLY MATHEMATICS LITERACY
FOR PRESCHOOLERS
WHO ARE BLIND or VISUALLY IMPAIRED

(Ages 2 ½ - 5 years)



One Two Take Off My Shoe

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SECTION 1

PROJECT RATIONALE

The *One Two Take Off My Shoe Early Mathematics Literacy Resource Kit and Manual* was created in 2010 to promote the development of early mathematics concepts for children 2 ½ to 5 years of age who are blind or visually impaired.
Early mathematics learning begins at birth for all children.

This research referenced project linking mathematics and literacy became a reality with financial support from Alberta Education, Students with Vision Loss Initiative. The five, *One Two Take Off My Shoe Early Mathematics Literacy Resource Kits* include: a comprehensive teaching manual with early number concept development activities and goals; a mathematics concepts vocabulary checklist; materials; and a listing of educational services and resources to support parents and educators.

The *One Two Take Off My Shoe Early Mathematics Literacy Resource Kits and Manual* are provided to Alberta Education Consultants for the Visually Impaired through the three Vision Resource Centres in the province as well as provincial programs linked by the Students with Vision Loss Initiative, Alberta Education.
The Vision Resource Centres and provincial programs include:

Provincial Programs
C.A.S.E. – Coordinated Assessment Services for the Exceptional
(Grande Prairie) www.gppsd.ab.ca

Vision Resource Centre – North
Newton School
c/o ERECS – Edmonton Regional Consulting Services
http://consultingservices.epsb.net/

Vision Resource Centre – Calgary
Captain John Palliser School www.cbe.ab.ca

Vision Resource Centre – Southern Alberta
c/o REACH – Educational Assessment & Consultation Services
(Calgary & Lethbridge) www.reachservices.ab.ca

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The following statements regarding mathematics learning are included in the *2007 Alberta Program of Studies for K - 9 Mathematics*:

> **"Mathematical understanding is fostered when students build on their own experiences and prior knowledge. Students are curious active learners with individual interests, abilities and needs. A key component in successfully developing numeracy is making connections to these backgrounds and experiences."**

Children who have sight make sense of their environment through observations and interactions at home, childcare, early education programs, and in the community. Children who are blind and visually impaired are not able to make these observations and do not learn incidentally as do children who have sight. It is important that we encourage young children who are blind or visually impaired to use all of their senses in order to interact with, experience and make sense of their world. Children who are blind or visually impaired require both structured and unstructured opportunities to manipulate and explore objects in order to obtain incidental information. Children who are blind or visually impaired need to be shown how to use both hands to manipulate, explore and discriminate between everyday objects. Developing finger and hand strength are also ongoing goals.

The 2007 Early Childhood component of the Alberta K - 9 Mathematics Program of Studies states: **"Mathematics learning is embedded in everyday activities such as playing, reading, beading, baking, storytelling, and helping around the home."**

Manipulatives, real objects, active learning, and children's books are the keys to developing mathematics and literacy skills in the *One Two Take Off My Shoe Early Number Mathematics Resource Kit and Manual*.

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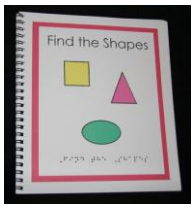
Literacy and mathematics skills are linked through shared book experiences. Lists of preschool books are included in Section 3 in this manual**.**

Some of these books are simple counting books while others involve a story with rhyming and repetitive patterns. Encourage your child to join in the reading by repeating the rhyming words or patterns which will contribute to the development of early literacy skills. Children will enjoy these books and gain more understanding of mathematical concepts the more often they are read.

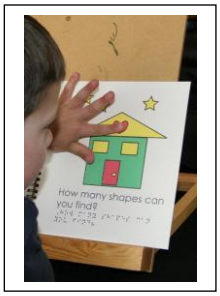
It is important to choose books that are appropriate for your child's visual loss. A few examples include: reduced clutter, tactile cues, braille, large print ... Use thicker pages for initial page turning (board books).

Mathematics skills, along with literacy skills can be developed through any read-aloud book.

When reading aloud include questions that focus on mathematics concepts, such as:



- Find the front/back of the book; top/bottom of the page.
- Find the first page. What do you see or feel? What's on the last page?
- Point to or feel the page number. Can you tell me what it is? What page do you think comes next?
- How many _____ are there?
- How many more _____ are there than _____?
- Show me two _____.
- What do you think comes next?
- How many wheels are on that truck?
- Can you find something on this page that is square?
- How many windows (doors) do you see/feel on that house?
- Point to the big _____.
- Find the small _____.



Throughout the manual ensure that the child has the opportunity to use both visual and/or tactual senses in all activities.

SECTION 2

EARLY MATHEMATICS CONCEPTS DEVELOPMENT

There are many concepts and skills essential to mathematics development. These may develop at different rates and in a different sequence for children who are blind or visually impaired.

1. Classification: matching and sorting to count and classification by function and association
2. Verbal Counting: reciting 1, 2, 3, 4, 5 …
   Counting forward and backwards: 5, 6, 7 … or 5, 4, 3 …
3. One-to-One Correspondence: one cookie for each child
4. Basic Number Concepts:
   a) Rational Counting: attaching a number name for each object counted
   b) Cardinality: how many? represents total number counted
   c) Ordinal Numbers: order as in first, second, third …
5. Subitizing: recognizing by quickly seeing/touching and naming familiar arrangements of 1-5 objects or dots without counting
6. Patterning: recognizing, describing, and extending repeating patterns
7. Ordering: orderly comparison of objects by size, height, weight, and length
8. Time Concepts: sequencing of events
9. Measurement: informal comparisons of length and weight
10. Beginning Fractions: parts and whole
11. Recognizing Numbers: print and/or braille
12. Verbal Addition and Subtraction to 5

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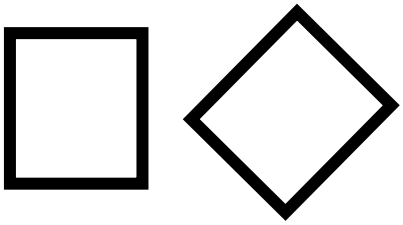
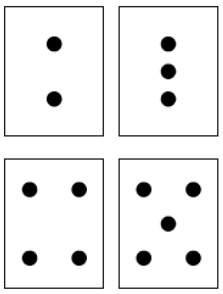
The following chart can be used as a guideline of mathematics concepts and skills with corresponding activities to determine if the child has acquired that particular early mathematics concept.

CONCEPT	ACTIVITY
1. Classification	
Classification by matching and sorting 	Place a large sized adult and a small sized child's pair of shoes in front of the child. Hand the child a small shoe and have them find the matching or same shoe. Can the child sort their toys? All the dolls in one spot, all the cars in another. Can the child match familiar shapes with different orientations?
Begins to classify or recognize sameness 	Child can group toys/objects that belong together (cars, animals, building toys, food, and clothing).
Grouping things by function and association	Given a group of objects such as toothbrush with toothpaste, soap with washcloth, spoon with bowl, the child can put them into groups based on function.
Sorting familiar objects into groups according to like attributes (3-D): spheres, cubes, cones, cylinders, and rectangular prisms	Given a sphere (ball), a cube (dice), a cone, cylinder (can) or rectangular prism (toothpaste box), the child can find an object with the same attributes when presented with a variety of 3-D objects to choose from. For example, show and let the child feel a model of a sphere. Then have the child find an object with the same attributes as the sphere among a group of 6 or more. Continue with all the 3-D objects.

CONCEPT	ACTIVITY
2. Verbal Counting	
Verbally counts to 5	Can recite numbers to 5. "Count for me."
Verbally counts to 10	Can recite numbers to 10. "Count for me." (Child may confuse order or miss a number after 5.)
The child says the next number word after 2 to 9 when given a running start.	What comes next? 1, 2, 3, 4, _?
Verbally counts beyond 10	"Count for me as far as you can."
Verbally counts backwards from 5	"Count backwards for me 5, 4, _, _,"
Verbally counts backward from 10	"Count backwards for me, 10, 9, _,"
Verbalizes the number that comes **before** or **after**, without a running start, up to 9.	"What comes next? 7, _," "What comes before 5?"
3. One-to-One Correspondence	
Match items one-to-one (for 1 to 5 objects).	The child can place 1 spoon with each bowl or put 1 block in each container.
One-to-one correspondence: 2 groups with 5 objects in each.	Show 2 groups of 5 objects and ask the child if there is the same number of (blocks, cars) in each pile. Ask them to show you how they know.

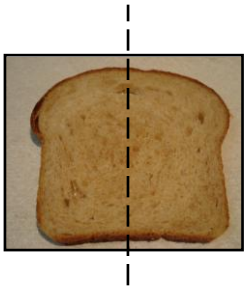
CONCEPT	ACTIVITY
4. Basic Number Concepts - Rational/Ordinal Counting and Cardinal Number	
Rational counts 1-4 items	The child counts out the items in a collection of 1-4 items and gives a number name for each item counted.
Counts out and produces a collection of a specified size up to 5 (rational counting). Tells you how many there are altogether (cardinal number).	Child counts up to 5 objects in a bowl and tells you how many there are altogether.
Represent collections of 1-6 items with a finger pattern. Begins to represent age with fingers (rational counting and cardinal number).	Child holds up the number of fingers corresponding to the number of objects that they have seen or touched.  Child holds up fingers to show how old they are but may not show the correct number of fingers.
Rational counting up to 10	Child counts up to 10 objects (child points to, moves, or arranges items as they count). 
Counts out (produces) a collection of a specified size up to 10 (rational counting and cardinal number).	Child counts as they place 6 cookies (or any other object/food items) on a plate and tells how many altogether. Continue up to 10. 

CONCEPT	ACTIVITY
Compares groups and identifies which group has more or less (fewer).	Given two groups of objects - one with 2 objects and one with 6 objects ask the child to point to the group that has more. Ask the child to point to the group that has less (fewer).
Rational counting to 10 and beyond and knows that the last counting word tells how many (cardinal number).	Child can accurately count 10 or more items and tell how many there are altogether.
Counts out or produces a collection from 1-20 items and tells how many (rational counting and cardinal number).	Child counts as they put up to 20 items in a bag and tells how many they put in altogether.
5. Subitizing	
Recognize at a quick glance (with eyes or touch) and tell how many without counting. 	Child can label a collection of 1-6 items with a number, without counting (tactile or visual).

CONCEPT	ACTIVITY
6. Patterning	
Participates in sequencing sounds. 	Count with the child in patterns of 2. For example: use children's songs or rhymes that emphasize patterns (with 2 elements) such as "open them, shut them; open them, shut them; open them, shut them." Have child repeat back. Then add another element with words and actions such as "jump, jump, fall down; jump, jump, fall down; jump, jump, fall down." Have the child repeat.
Recognizes a simple pattern with 2 elements. 	When presented with a pattern involving 2 different elements (items such as a red ball, blue car) repeated 3 times (red ball, blue car; red ball, blue car; red ball, blue car), the child will produce the same pattern when given red balls and blue cars. Can the child do this activity using shapes such as circle, square or with the same objects but different colours such as red crayon, yellow crayon?
Recognizes a simple pattern with 3 elements.	Use the same sequence as the activity above with 3 elements (items) involved.

CONCEPT	ACTIVITY
7. Ordering	
Demonstrate the ability to order 3 objects according to a common attribute (size, weight or length). 	Given the same object in 3 different sizes (rocks, bowls, or shoes) the child can line them up from biggest to smallest or vice versa. Repeat using other common elements with objects such as pencils, Wikki Stix, licorice (length); food containers, rocks, fruits (weight); soccer ball, golf ball, beach ball (size).
Demonstrate the ability to order 5 objects according to a common attribute (size, weight, or length).	Give the child 5 objects in different sizes, weights or lengths and line up and order.
8. Time Concepts	
Comprehends time concepts: today, last night, yesterday and tomorrow.	The child can verbalize what they did last night, yesterday, today and talk about what they will or may do tomorrow.
Can verbally order 3 events of the day by time sequence.	Have the child tell you the sequence of steps in a familiar event. For example: get up, have breakfast, brush teeth.
Can order 3 pictures sequentially of a familiar activity.	The child can order 3 pictures of an activity that they have participated in or a familiar event. For example, take a digital photo of the child at the beginning, middle and end of an activity such as snack time and have the child order the pictures. For a child who is blind this will require a verbal explanation and may not be mastered until a later date.

CONCEPT	ACTIVITY
9. Measurement: informal comparisons of length & mass	
Compares objects based on a single attribute, such as size, length (height), weight (mass), quantity (more/less), and volume (capacity).	Given a big item and a small item, such as a big block and a small block, a big ball and a small ball, the child can point to the big/small ball/block. A child can tell you which is bigger: an apple or a house; which weighs more a cat or an elephant; who is taller an adult or a child. Are these the same or different (hold up 2 balls and then a car and a ball). Place two sticks, pretzels, pencils, licorice ..., on a table and ask which one is bigger or taller. Provide 2 sets of objects (one set of 2 objects and one set of 4) and ask which has more. Show the child 2 different sizes of containers. Ask which container they think will hold more raisins, cheerios, sand or water? How do you know?
Demonstrates understanding of comparison language.	Child can use words like empty-full, more-less, same-different, long-short, big-small, appropriately when comparing objects.

10. Beginning Fractions	
Demonstrates an understanding of the concept of part-whole. 	Place 2 slices of bread in front of the child. Cut one slice in half. Have the child point to the slice that is whole. Have the child point to the slice that is not whole. Tell the child each piece is one-half of the whole slice. Have the child place each half on top of the whole slice to demonstrate the concept of part-whole.
CONCEPT	**ACTIVITY**
11. Recognizing Numbers in Print and/or Braille	
Recognition of numbers in print and/or braille up to 3. 	Provide large print numbers 1-3 and have the child identify each. Mix up the order. For the child who uses braille have them identify the number sign and literary braille numbers to 3.
Pairing the number of objects to the corresponding number up to 3.	Child can match the correct number of manipulatives to the corresponding number in braille or large print up to 3.
Pairing the number of objects to the corresponding number up to 5.	Child can match the correct number of manipulatives to the corresponding number in braille or large print up to 5.
Pairing the number of objects to the corresponding number up to 10.	Child can match the correct number of manipulatives to the corresponding number in braille or large print up to 10.

CONCEPT	ACTIVITY
12. Verbal Addition and Subtraction to 5	
Non-verbal addition and subtraction involving 1-3 items.	Show the child 2 objects. Add a third object, which is placed under a napkin. Have the child make a set, which has the same number of objects as yours (3). Show the child 3 objects and cover one with a napkin. Have the child make a set, which has the same number of objects as yours (2).
Adds and subtracts verbal word problems using objects or fingers, totals to 5.	Put two balls in a container. Add or subtract one more ball to or from the container. Ask the child how many balls are in the container now. Continue to a maximum of 5 objects.

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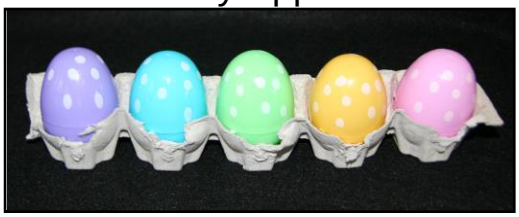
When using manipulatives for any of the activities listed consider the following guidelines (use your discretion when using small objects with young children):

- Use real and everyday objects in activities whenever possible. For example: clothing, bowls, cups, spoons, fruit, vegetables, coins, toothbrush, toys ... Give the child many opportunities to hold and feel the whole object and to hear the name of the object.



- Use a cookie sheet, egg cartons, and muffin tins to provide a physical boundary to keep materials from rolling off.
- Ensure that manipulatives are well contrasted. A black mat can be used to add contrast if necessary. Additional or minimized lighting may be needed depending upon the child's eye condition. Reduce background clutter as much as possible.

- Use as many environments as possible to expose the child to numeracy and literacy concepts (home, zoo, grocery store, pet store, swimming pool ...).
- The child who is blind needs to be encouraged to use two hands to search for and locate tactual information.

SECTION 3

ACTIVITIES THAT BUILD EARLY MATHEMATICS CONCEPTS & SKILLS

Additional activities and ideas are listed in the Resource Kit Materials Goals & Activities section.

1. Classification

Classification skills can be broken down into matching, sorting, and classification by function and association. The simplest step begins with learning to match objects; putting two objects that are exactly the same together. Sorting is a higher level classification skill in which a child is able to take a set of objects and sort them into smaller groups according to a common attribute.

The following categories are used to match and sort items: by objects, colour, size, shape, sound, textures, and picture.

Matching by:

Objects

- Give the child 3 objects to play with. For example, 2 objects that are the same, such as 2 shoes and 1 object that is different such as a toothbrush. As the child is feeling the objects, talk a little about each object. “Here is a shoe for you.” “That’s a toothbrush – you brush your teeth with it.” After the child has had a few minutes with the objects, give the child one object and say “find one like this one” or “find one that is the same.” Do not name the objects.

- Provide objects that the child uses everyday to match. For example, match spoon with spoon, shoe with shoe, and toothbrush with toothbrush, cup with cup, soap with soap ...
- Throughout the day show the child how things match. When dressing, hold one shoe and ask the child to find the other one. At snack time, hold up a cracker and see if the child will match it to his or her cracker when there are other items in front of him or her.

Matching by:

Colour

Use bright colours with good background contrast.

- Begin with with the same objects, but differing in colour (given three cups of different colours in front of the child and handed a yellow cup, the child will find the other yellow cup).

- For a more challenging activity have the child select the exact match from a group of different objects (for example, finding the mate to a blue sock among other colours). For children with minimal vision a light box could be a useful tool for matching by colour as it maximizes contrast.

- Talk about colours with the child who is blind. Use colour words to describe objects; “this lemon is yellow, the apple is red, the brown ice cream looks good, it must be chocolate, the sky is blue today with some white clouds.” Tell the child what colour they are wearing so that an awareness of colour is developed.

- For children who are blind have them tell you something they think is the same as their favorite colour. If appropriate ask them why.
- Ask the child their favorite colour and have them find something in the room that is the same colour.

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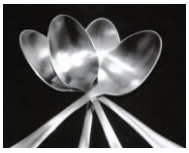
Matching by:

Size

- Make tactile books that have big and little objects on each page. Use real objects such as buttons, band-aids, coins, socks. Have child find the big one or the little one on each page.
- Talk about who is big and little in the school; what objects are big and little in the house.
- Play big steps and little steps or big jumps and little jumps when walking.
- Have a big box and a little box and a collection of big/small objects. Have the child sort the objects into the appropriate box.

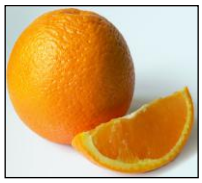
- Talk to the child throughout the day. "Here are the teacher's big shoes. Put them on the mat." "Let's put the small blocks in this bucket."
- Place a large adult and a small child's shoe in front of the child. Hold up a small shoe and have the child find the matching or the same shoe.

- Use everyday objects that the child has had experience with (spoons, pans, socks, apples, bananas). Have the child match large spoons with large spoons, small spoons with small spoons. Ask the child, "Which spoon do you like to eat with? The large spoon or the small spoon? Why?"



- Have two sets of objects that are different in size (paper towel rolls and toilet paper rolls). Provide one set for the child and one set for the adult. Show the child one of the objects in your set and have him or her find the one that is the same size in their set. Appropriate materials include coffee cans and soup cans, long and short straws, 1 litre milk cartons and small cream cartons. To extend this activity place objects that are a variety of sizes in a container. Provide the child with one of the objects and have him or her find all the objects that are the same size in the container.

- Play a game, “Which is bigger – a car or a spoon?” This game compares objects for size without handling them. (The child needs lots of previous hands-on experiences with many different types of items).
- Talk about the size of food items as you prepare and eat them. Have the child hand you a piece of fruit you request. Talk about how much larger the orange is than the grape.



- Have the child explore a toy car and then explore a full size vehicle. Talk about similarities and differences between the two cars in relation to the size.
- Talk about the size of the adult’s bed, sheets and blankets as you make it. Compare to the size of the child’s bed and blanket.

Matching by:

Shape

3-Dimensional Objects – Objects which have the 3 dimensions of height, length and width.

- With the child find 3-dimensional objects in their environment that are:
  - Round and rolls: for example, balls, oranges, tomatoes, door knobs, marbles, gum balls. (sphere)
  - Square, slides & stacks: for example, dice, wooden blocks, sugar cubes, ice cubes, boxes. (cube)
  - Round, rolls but not straight, and has one point: for example, ice cream cones, birthday hats, funnels. (cone)
  - Round with flat ends, rolls straight and stacks: for example, paper rolls, pencils, straws, crayons, cans. (cylindrical)

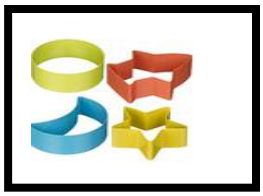
- Have children sort objects into groups according to the attributes listed above.
- Construct structures with the child using boxes, blocks, paper rolls, cans, cones ... Talk about which objects work together, work best as a base, can go on top ... Encourage the child to describe the objects using words like points, corners, sides, flat, stacks, round, objects that roll.
- Use play-dough to make objects. Talk about the object's shape (round like a ball, square like a box, cylinder like a can, cone like an ice cream cone); number of corners, number of sides, size (big/small).
- Create play-dough objects and have the child make one that is the same as yours. Start with round objects as they are easier for the child to form.

Solid Objects 3-D – Kit 1A

2-Dimensional Shapes – *A shape with 2 dimensions; length and width.*

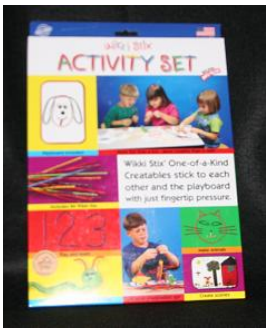
- Next, move to two-dimensional flat shapes such as those typically found in a puzzle, form boards, or shape sorter set. (The Stack & Sort Board is in Section 6 of the manual.) The Light Box and Level 1 materials (available to borrow from LRC-SSVI) have shapes that can be used for matching.

Stack & Sort Board – Kit 1A



Let the child feel the whole shape of a cookie cutter. Make shape cookies using circular, square and triangular-shaped cookie cutters. Talk about shapes that are the same or different.

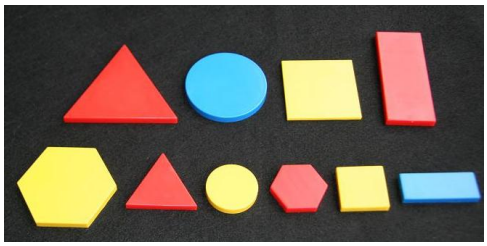
- Using a slice of bread/cheese and a dull knife cut shapes out of the bread. Have the child match the shapes. Then have them help you make a circle/triangle/square/rectangle cheese sandwich.
- Make shapes using Wikki Stix, flex straws, pipe cleaners, yarn or string glued onto paper and have the child use their tactile skills to identify the shape. Use the Activity Set and make a shape (begin with circle) then have the child make the same shape to match.



Wikki Stix – Kit 1B

- For the child with low vision, have them match 2 pictures of coloured shapes, then match a picture of a coloured shape to a picture of a black solid shape, and then match the colour picture to a bold black outline of the shape.
- Using picture books have the child identify shapes within the book. Have the child point to a shape in the book and find other things in the environment that are the same shape.
- For the child who is blind, have them match tactile shapes.

- Use Wikki Stix to make a circle. Leave a space and make a circle, square, and a triangle. Have the child locate the first circle and then find the one that is the same. Repeat with the other shapes.



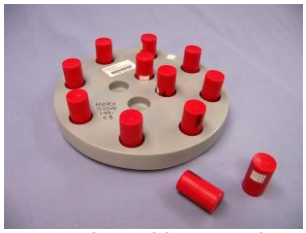
Magnetic Shapes 2-D – Kit 1A

Matching by:

Sound

Sound Matching Board II
LRC-SSVI
Access *abcg*

- Make your own sound matching activity by filling reusable containers, glass jars, travel toothbrush holders with beans, rice, pebbles, water, small bells ... Fix the lids securely to prevent spills. You will need two identical containers for each sound. Have the child shake them and find the two that are the same and one that is not the same or different. Start with items that sound very different. LRC-SSVI has Sound Matching Board I and II Kits that you can borrow. At a more advanced level, mix up all the sound containers. Have the child sort out pairs that sound alike.



Sound Matching Board I
LRC-SSVI - Access *abch*

Matching by:

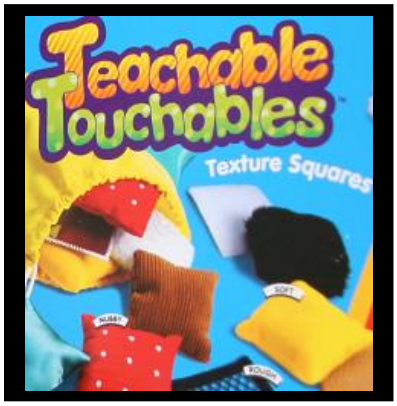
Texture

- Talk about everyday items that the child touches and how the objects feel – bumpy, smooth, soft, hard, and rough. Make sure the child is using the whole hand to explore – not just one or two fingers. Encourage the use of both hands.
- Expose the child to similar objects made of different materials. Cups may be plastic, paper, glass, metal with and without handles; spoons can be made of wood, hard plastic, metal ... Talk about how they are the same or different.
- Make your own texture matching activity by having different textures glued to the bottom of juice can lids. You will need to make two of each texture. Start with 2 pairs that are very different in texture and increase the number as mastery occurs. The Sensory Cylinder Set is available through LRC-SSVI on a loan basis.

Sensory Cylinder Set
LRC-SSVI
Access *abcn*

1-2-3-4-5

- Allow the child to explore their environment to find 2 things that are hard, soft, bumpy, metal, wood ...
- Teachable Touchables is a texture matching activity resource which can be used to develop an understanding of colour for a child who is blind.

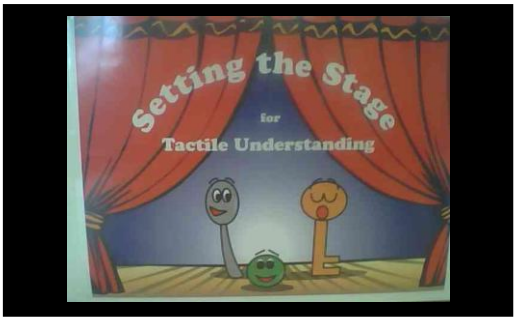


Teachable Touchables – Kit 1A
Independent Living Aids www.independentliving.com/

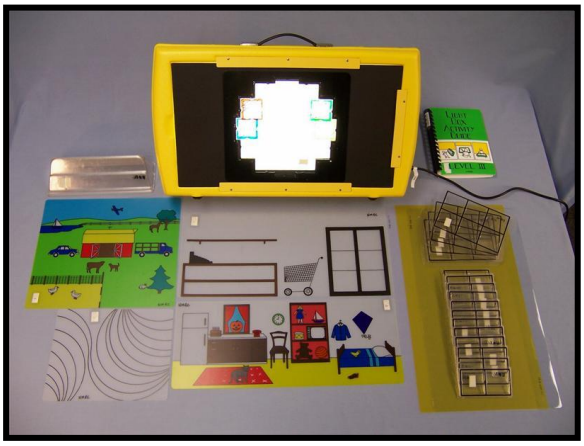
Matching by:

Pictures

- Start with having the child match common objects such as a spoon to simple pictures of the object. Move on to matching pictures that are the same. There are also picture matching sets in the Light Box Materials Level 3, available on loan from LRC-SSVI. The kit, Setting The Stage For Tactile Understanding, is available through American Printing House for the Blind (APH).
  For a child who is blind, outline smaller everyday objects with Wikki Stix. Using hand under hand guidance, assist the child in tactually exploring the object outline. Then have the child match the object with the raised representation.



Setting the Stage for Tactile Understanding (APH)



Light Box Materials Level III
LRC-SSVI
Access *ajte*

Sorting

Sorting is a higher level classification skill in which the child is required to take a set of objects and sort them into smaller groups according to common attributes: type of object, colour, shape, texture, sound. Begin with actual objects before moving to pictures of objects. Sorting is foundational to building number and spatial sense in order to recognize similarities and differences and to make comparisons, both numerically and non-numerically.

Sorting By:

Object

- Initially, use two different kinds of objects (block/car). Use 2 empty bowls or margarine containers and have the child sort the objects into the appropriate container.
- Sort out a child's toys with them: all the dolls in one spot, all the cars in another.

- Have the child help you to put away grocery items – the cans go in the cupboard with the other cans, oranges go in the fruit bin in the fridge, frozen treats go in the freezer.
- Have the child help to empty the dishwasher and sort out the cutlery. Put away the cutlery (sort out spoons, forks ...). Have the child sort laundry. (For example, all the socks in a pile and the washcloths in a different pile).

- Have the child sort familiar household or playschool objects: blocks, spoons, cups crayons, cars, pop beads, pots and lids ...

Sorting by:
Shape

- Sort and name 5 basic geometric shapes (circle, square, triangle, rectangle, and oval). The Stack & Sort Board, Shape Sorting Board, and the Light Box Level 1 & 2 materials are good resources for this task.
- Using a cookie sheet and a variety of magnetic shapes (available at Dollar Stores), have the child sort by shape.
- Give the child a small group of circles, squares and triangles, all of the same size and texture. Ask the child to sort them into 2 groups in any way they want. When the child is finished ask them to explain what each group is called. Pick out a shape and ask why it went into one group as opposed to another group (responses may be inconsistent).

Shape Sorting Box
Kit 1A

Shape Sorting Board
Kit 1A

Sorting by:
Colour

- Give the child who has low vision objects to sort by colour. For example, crayons, blocks, or connecting cubes. Have the child put the red ones together, yellow ones together ...
  The Shape Sorting Board and Stack & Sort Board are also good resources for this concept.

Peg Kit – Kit 1A

Stack & Sort Board – Kit 1A

Sorting by:

Size

- Mix adult shoes and child's shoes and sort together by size.
- Sort toys based on size - big and little.
- Have the child sort simple laundry items: for example, big socks and little socks, face cloth and bath towel, big t-shirt and little t-shirt.
- Have the child sort kitchen items: for example, big glasses and little glasses, big spoons and little spoons, big pots and little pots.

Sorting by:

Texture

- Have 2 shoeboxes for sorting objects that are hard/soft; rough/smooth.
- Have the child sort objects and materials that have the same texture. For example, knitted clothing - scarves, mitts, sweaters. Have the child sort their toys by putting all the soft toys on the bed.
- Use the texture shape activity (Teachable Touchables) to sort the textures.

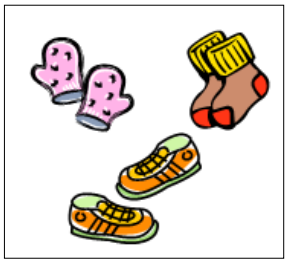
Sorting by:

Sound

- Sort sounds by categories. For example, loud/soft sounds, animal sounds (farm or zoo), environmental (indoor sounds and outdoor sounds).
- Fill small containers (re-useable storage containers, baby food jars) with rocks, rice and sand for sorting sounds by loud and soft.

Extension Activities

- To extend the sorting process, the child can sort a variety of types of eating utensils: large, small, plastic, wooden, metal. Combine 2 attributes and have the child find all the 'small wooden spoons' or 'large metal spoons'.
- To extend the sorting activity, have the child count how many in each pile. "Which is the biggest and which is the smallest pile? How do you know?" Talk about the concept of same. For example: "This sock is the same size as this sock." Introduce the concept of 'same' and 'not same' before you introduce different.



- Give the child a group of objects (cars, cut-out shapes, or pegs), some that are large and some that are small. Ask the child to sort them in any way they want. When they have finished, ask the child what he or she calls the two groups. Pick out an object and ask the child why it went into one group as opposed to the other group (responses may be inconsistent).
- For a child who is blind the goal would be to sort raised picture outlines according to common attributes: for example, pictures of balls, functional objects (cups, spoon), shapes. With this skill one needs to ensure that the child has had some exposure to tactile diagrams. *Lois Harrell's Teaching Touch: Helping Children Become Active Explorers of Tactual Materials* is an excellent resource available through APH (American Printing House). There are several kits that are available through LRC-SSVI to provide practice. One of these is APH's "Tactile Treasures." For a child who has sufficient vision to be considered a print user, sorting non-cluttered realistic pictures would be the focus. The APH familiar object pictures are recommended for size, contrast and simplicity.

Light Box: Mini-Lite
LRC-SSVI
Access *axcv*

- The Light Box: Mini-Lite is available through LRC-SSVI.

1-2-3-4-5

Classification by Function & Association

There are many natural ways in a child's daily routine to reinforce the concepts in learning to group things by function and association.

- One way to group by function is to keep things that are used together in the same location when possible. For example, paint and paint brushes, toothbrush and toothpaste, soap and washcloth. Let the child know if you have moved items to a new location.

- Give the child a box or basket with objects that go together: shoes and socks; spoon and bowl; comb and brush; paper and crayons; lock and key; scissors and paper; pillow and pillowcase; sock and shoe; money and wallet; toothbrush and toothpaste; soap and washcloth. Play, "I'm thinking of something that goes on your toothbrush; that unlocks a door; that you use with your crayons; that you put on your pillow." There will often be more than one correct response.
- Talk about things that are used together during daily routines, such as bathing, getting dressed, setting the table ... For example, throughout the day ask, "You have your coat on, what else do you need to get dressed for going outside?" "Let's make a sandwich for a snack – now what will we need?" "Here's your washcloth. Where is the soap?" "I have your shoes. Bring me your socks."

- Use many natural routines to teach classification by association. For example, "Let's put all of the things we eat with together (spoon, plate, and cup); things we wear (coat, hat, and boots); things we play with (balls, dolls, or blocks); things that make music (horn, tambourine, whistle); things we use for art (paint, glue, water)."

1-2-3-4-5

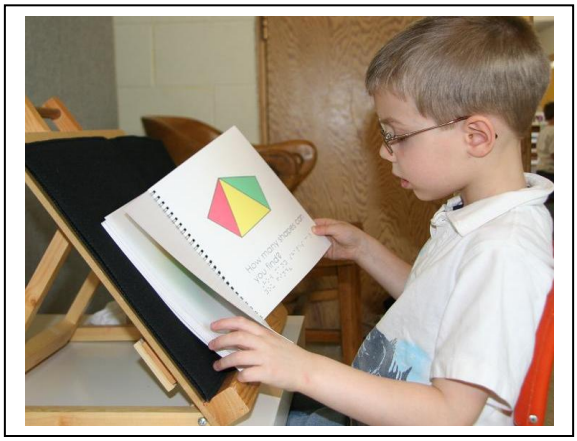
Sorting Books

A Collection for Kate **by G. Fiannenghi**	***Shoes*** **by Elizabeth Winthrop**
Brown Bear, Brown Bear, What Do You See? **by Bill Martin Jr.**	***Some Things Go Together*** **by Charlotte Zolotaw**
Colours **by S. Hughes**	***The Button Box*** **by Margarette Reid**
Is It Red? Is It Yellow? Is It Blue? **By T. Hoban**	***Sorting (Math Counts)*** **by Henry Arthur Pluckrose**
Giggly – Wiggly, Snickety – Snick **by R. Supraner (APH)**	***That's Not My Bear*** **by S. Wright (APH)**

1-2-3-4-5

Shape Books

Circles, Triangles and Squares **by T. Hoban**	***Sea Squares*** **by Joy Hulme**
Look Around! A Book About Shapes **by Leonard Fisher**	***Shapes*** **by Philip Yenawine**
My Very First Book of Shapes **by Eric Carle**	***Shapes of Things*** **by D. Althea**
Round is a Mooncake: A Book of Shapes **by R. Thong**	***The Shape of Me and Other Stuff*** **by Dr. Seuss**
Shape (Math Counts) **by Henry Arthur Pluckrose**	***What Am I? Looking Through Shapes At Apples and Grapes*** **by N.N. Charles**
Find the Shapes **Tactile Vision Inc. Canada**	***Shapes – Circle, Square, Triangle*** **Play & Learn**
What Shapes Do You See? **Begin Smart**	***Soft Shapes – Shapes*** **Innovative Kids**
The Blue Balloon **by M. Inkpen (APH)**	***The Gumdrop Tree*** **by E. Spurr (APH)**



2. Verbal Counting (Rote Counting)

Many children will verbally count ‘one’, ‘two’, ‘three’, ‘four’, ‘five’… At this stage they do not necessarily have one-to-one correspondence or understand that the number refers to an item or set of items. Providing many consistent opportunities to count is essential to early number concept development. Children learn to count verbally before they understand the concept that one number represents one object (one-to-one correspondence).

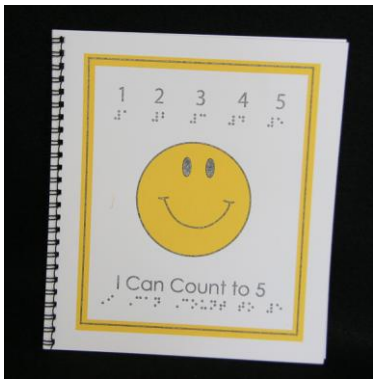
Some activities are listed below.

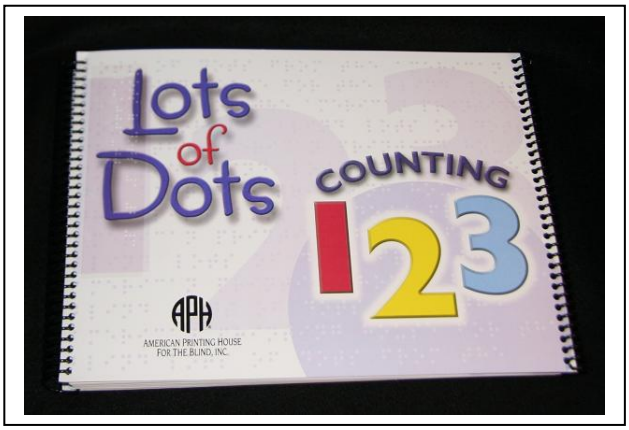
- Give the child many opportunities throughout the day to count. Count with the child at first, then pause and wait for child to fill in the missing number (one, two, ___). Start by counting to five, and then move to ten.
- Have the child practice stirring pancake batter 5 times.
- Play and sing number songs: for example, when driving and at appropriate times throughout the day.
- Say numbers during daily activities: for example, counting steps on stairs, putting on mitts (one mitt, two mitts), hat, shoes, or cookies on a plate. “One, two take off your shoe, one, two, put on your shoe.”

Extension Activity

Verbal counting to 100 is an extension of verbal counting to ten. Taking the numbers in groups (20 to 29, 30 to 39, 40 to 49 ...) can be an easier way to memorize groups of numbers. This requires memorization and needs lots of practice. Lots of Dots: Counting 1 2 3, is an excellent resource and is available through APH.

- Read books/rhymes to the child that focus on verbal counting.





3. One-to-One Correspondence

One-to-one correspondence is matching one object/person to another object/person. For example, one mitten for one hand. Children learn to count verbally before they understand the concept that one number represents one item. Once children can count verbally to 5, introduce activities that re-enforce one-to-one correspondence in everyday activities. This is the most fundamental component of the concept of number. It is essential to building the understanding of sets (more, fewer, same). One-to-one correspondence is a precursor to rational counting. Rational counting is one number name given for one object.

It is important to provide concrete experiences with a variety of objects. Objects to count will meet the child's need to handle, compare, arrange, and rearrange in order to think about numbers in a concrete way. Although some objects counted will be stationary, it is essential that most are movable so that the objects already counted can be separated from those still to be counted.

The *Oregon Project for Preschool Children Who are Blind or Visually Impaired* states: "When counting, have the child move the object to the right and say the number or put it in a bowl as you say the number. Just touching and counting doesn't always work since the child can't easily keep track of what has been counted."

For accurate counting, three principles are essential: first, the child says the numbers in the correct order, as in verbal counting; second, the child counts each object in a set only once; and third, the child says one number name for one object. Some activities are listed below.

- Have the child set the table for pretend or real dinner. Set out three place mats. Then give the child three plates, forks, spoons, cups, and napkins. Have the child count aloud to three as they set out each of the items.

1-2-3-4-5

- Use a cookie sheet and magnet counters for counting 1-5. Line up the magnet counters into a horizontal row. Have the child begin at the left end of the row and place each magnet counter into a container as they count to five.
- Have child hand you a snack and say, "One carrot stick for you and one carrot stick for me."

- Provide opportunities throughout the day for the child to experience one-to-one correspondence. For example, one chair per child, one shoe per foot, one lid on every jar, one stamp per envelope, or one candle on each piece of birthday cake.
- Say, "Let's put a band-aid on your sore finger."
- Place objects in/out of a container using one hand to locate opening and one hand to put 1 object in. The child may require help to learn the skill of using both hands. The child needs to develop a strategy of an "active" hand (usually child's dominant hand) and a helping hand. One hand manipulates the object as the other stabilizes and provides a reference point. This strategy will be helpful on many other activities (eating, braille/print reading, working with puzzles ...). Use different containers to practice the above. Shoe boxes, muffin tins, coffee cans, margarine containers, cereal cartons, and egg cartons can be used to put a variety of objects inside. Different objects (blocks, keys, spoons ...) can be put in the containers.

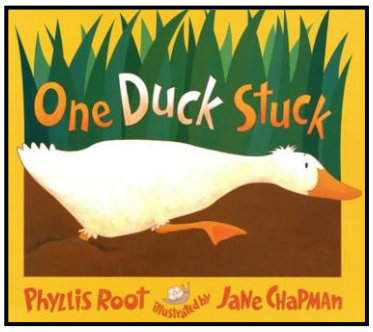
1-2-3-4-5

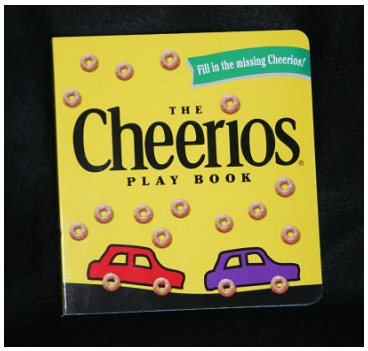
- Cut an egg carton horizontally into 5 compartments for counting objects 1-5. Use a variety of objects to ensure child has had exposure to them such as: golf balls, cars, blocks, raisins, marbles, paperclips, keys, coins, bread tags, cars, balls of wool, marshmallows.

- Scoop marbles from a container with a melon scoop. Child puts one marble in each compartment of an ice cube tray.

One-to-One Correspondence Books

Caps for Sale **by E. Slobodkina**	***The Three Bears***
Hannah and the Seven Dresses **by M. Jocelyn**	***The Three Billy Goats Gruff***
Ten Cats Have Hats **by J. Marzollo**	***The Three Little Pigs***
The Cheerios Play Book **by L. Wade**	***One Duck Stuck*** **by P. Root**





4. Basic Number Concepts

"Blind Children cannot rely on visual-spatial strategies for object counting, instead using tactile-motor systems for keeping track of which objects have been counted." *(S. P. Sicilian, 1988, Journal of Visual Impairment & Blindness, pg. 331-335).*

"Accurate blind counters used three sets of strategies. Scanning strategies were used to determine the size of the array and any distinctive characteristics such as linearity or circularity, that could be used to organize counting. Count-organizing strategies capitalized upon these characteristics to create a plan for keeping track. Partitioning strategies selected individual objects and maintained the separation of objects that had not yet been counted. The researcher proposed developmental progressions for these, each of which moves from no, to inefficient to efficient strategies:

- **preliminary scanning strategies -**
  - no scanning (just started counting);
  - moves the hand across the objects unsystematically;
  - moves the hand across all objects in a fixed array systematically, or moves objects during counting.
- **organizing strategies -**
  - none;
  - follows a row, circle or array but does not use reference point to mark where started;
  - uses a reference point, or moves objects during counting.
- **partitioning -**
  - no one-to-one correspondence;
  - touches objects but no systematic partitioning, or moves objects but put them back in same group;
  - uses moveable partitioning system or moves objects to new location." *(Clements and Sarama, 2009, pg. 225-226).*

1-2-3-4-5

Rational/Ordinal Counting and Cardinal Number

Rational counting is attaching a number name for each object counted. When the task requires the child to tell how many there are altogether they are using cardinality. When the task requires ordering (first, second, third) ordinal counting is involved.
The activities listed below are examples that use rational/ordinal counting and cardinal number.

- Count each push as the child swings at the playground (rational counting). How many pushes? (cardinal number)
- Count items of clothing when dressing or undressing (1 sock, 2 socks). "We only have one shoe, where is the other shoe? One shoe, two shoes." (rational counting)
- "I have two cookies – one, two." (rational counting)
- As you wash the child's face, hands … say: "Let's wash 1 ear, 2 ears, 1 nose, 1 mouth, 1 hand, 2 hands ...)." "Let's wash each of your fingers, one, two, three, four, five." "One, two wash your hands, one, two dry your hands." See rhymes and songs section for more ideas (rational counting).

- Give the child a drum and have him hit the drum one time for each number said. (rational counting)
- Count brush strokes when brushing hair or teeth (rational counting).
- Practice counting and touching – count apples as you place them in a bowl; touch and count socks as you take them out of the dryer; count letters that come in the mailbox (rational counting).
- Spread soft cheese on a celery stick to make logs. Have the child add pretend ants (raisins) to the logs and count each out loud as they place them on (rational counting).

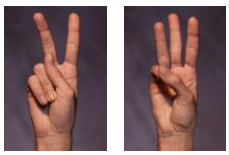
1-2-3-4-5

- Have the child count 1-5 objects. Increase this to 1-10 objects when the child has mastered 1-5 (rational counting). By having the child hold up fingers to represent the number of items in each collection, you are developing an understanding of cardinality.
- Count out 5 cookies or raisins for friends at snack time (rational counting).

- Have the child put 5 magnetic pieces on a cookie sheet; counting each as he or she places them. Then have the child tell you how many there are altogether (cardinal number).

- In a line of toys (3-5) have the child touch the first car and the last car. Expose the child to the concept of middle (ordinal number).
- Expose the concepts of first and last by verbalizing the words in functional contexts.
  For example, have the child line up first and last in the classroom; put clothes on in a specific order ("First put your coat on, last your mitts.") and eat your snack in a specific order ("Eat your sandwich first and eat your pudding last.") (ordinal number).
- Have the child line up 3 toy cars or other objects horizontally and identify each as first, second, and third (ordinal number). Line up 3 objects vertically and have the child point to the one that is first, second, and third. Use familiar objects in the child's environment.

1-2-3-4-5



- Have the child count the fingers on the left hand and then tell you how many altogether. You may have to show the child which fingers to use to show three and how to hold down the little pinky finger with the thumb. Continue with the right hand, left foot, and right foot. Repeat with many objects in the child's environment to ensure that they have mastered and generalized the skill (cardinal number).

- Count 4 oranges to put in a bag at the grocery store or count 3 items taken out of the cart (rational number). After each, have the child tell you how many altogether (cardinal number). This activity can also encompass the use of several senses - smell of the orange, texture, feeling the shape, and what it tastes like.

- Lay out a variety of containers and lots of grapes or carrot sticks or raisins ... Ask the child to put a designated number of the items (1-10) in each container (cardinal number).
- Use large print or braille dice and fish crackers to play a game. Put some fish crackers in a bowl. Roll one dice and have the child count the number of dots that come up. They will then count out that many crackers and put them into another container. Take turns and play until you empty the bowl (cardinal number). This can then become a measurement comparing activity by determining who has the biggest/smallest pile or the more/less/same using vision or touch.
- Using refrigerator cookie dough, arrange cookies on a baking sheet. Provide chocolate chips, raisins, or candies. Ask the child to put from 1-5 of an item on each cookie. Count the items together (rational counting and cardinal number).
- Use the Ice Cream Cone activity in the resource section. Have the child add and remove the scoops using the words, first scoop, second scoop, and third scoop (ordinal number).

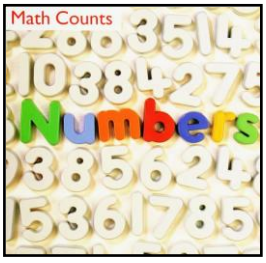
1-2-3-4-5

This activity could also be a rational counting and cardinal number activity by having the child count each scoop as he puts it in the cone and indicating how many in all.

Repetition in many different environments and activities is the key to developing both verbal and rational counting.

Number Concept Books

A Frog in the Bog **by Karma Wilson & Joan Rankin**	***1 Hunter*** **by Pat Hutchins**
Animal Numbers **by Bert Kitchen**	***Seven Little Monsters*** **by Maurice Sendak**
Anno's Counting Book **by Mitsumasa Anno**	***Seven Little Rabbits*** **by John Becker**
Best Counting Book Ever **by Richard Scarry**	***Spot Can Count*** **by Eric Hill**
Brian Wildsmith's 1,2,3's **by Brian Wildsmith**	***Ten Apples Up On Top*** **by Theo LeSieg**
Five Little Monkeys Jumping on the Bed **by Eileen Christolow**	***Ten Black Dots*** **by Donald Crews**
Five Little Monkeys Sitting in a Tree **by Eileen Christolow**	***Ten Little Rabbits*** **by V. Grossman**
Frogs Count to Ten **by John Liebler**	***Ten Seeds*** **by Ruth Brown**
I Knew Two Who Said Moo **by Judi Barrett**	***Ten, Nine, Eight*** **by M. Bang**
My Little Sister Ate One Hare **by Bill Grossman**	***The Crayon Counting Book*** **by P. M. Ryan & J. Pallotta**
My Very First Book of Numbers **by Eric Carle**	***The M&M's Counting Book*** **by B. B. McGrath**
One Fish, Two Fish, Red Fish, Blue Fish **by Dr. Seuss**	***The Very Hungry Caterpillar*** **by Eric Carle**
One Gorilla **by Atsuko Morozumi**	***Who's Counting?*** **by N. Tafuri**
Numbers (Math Counts) **by Henry Arthur Pluckrose**	***Jelly Bean Jungle*** **by S. Wright (APH)**
How Many Feet in the Bed **by D. J. Hamm**	***Counting Kisses*** **by K. Katz**
Five Little Ladybugs **by M. Gerth**	***Tactile Math Counting to 10*** **(Teacher prepared)**
Sadie Can Count **by A. Cunningham**	***Touch and Learn 1 2 3*** **Make Believe Ideas Ltd.**
Lots of Dots: Counting 1 2 3 **American Printing House**	***I Can Count to 5*** **Tactile Vision Inc. Canada**



5. Subitizing

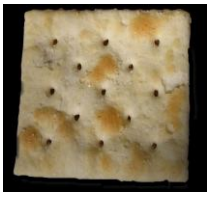
A child can subitize when they can recognize at a glance, or in the case of a child who is blind a quick glance with his or her fingers, and name familiar arrangements of 1-5 objects or dots without counting. "Subitizing small numbers appears to precede and support the development of counting ability." *(Le Corre et al., 2006).* "Subitizing forms a foundation for all learning of numbers." *(Sarama and Clements, 2009).*

Some activities for developing subitizing skills are listed below:

- Have the child tell you how many raisins, jelly beans, marshmallows, cheerios or goldfish ... are on the plate, without counting. Start with one to three objects then four to five objects.
- Give the child 3 cookies and ask how many there are. Can the child tell you the number without counting?
- Show the child his or her shoes and have him tell you how many without counting.
- Have the child toss a large print or tactile dice and then verbalize how many dots there are without counting.







6. Patterning

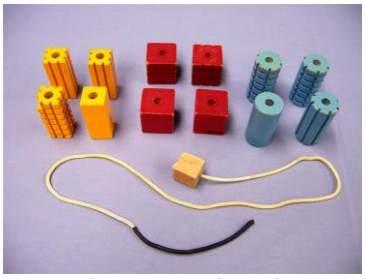
For young children patterns are introduced using concrete materials in a repeated sequence.
"Mathematics is about recognizing, describing and working with numerical and non-numerical patterns. Working with patterns enables students to make connections within and beyond mathematics. These skills contribute to students' interaction with, and understanding of, their environment" (*Alberta Program of Studies for Mathematics, 2007*).

"Patterning is more than a content area; it is a process, a domain of study, and a habit of mind. Young children develop foundational understanding by working with simple sequential repeated patterns." *(Clements and Sarama, 2009).*

Note: When building a pattern each distinct item is called an element. For example, a pattern of red, blue; red, blue, red, blue has 2 elements (red and blue). Adding a 3rd colour would add a 3rd element. Each repetition is called a unit. The above pattern has 3 units (it is repeated 3 times) and it has 2 elements (it has 2 colours). Initially start with 2 elements and add one more.

Some activities are listed below:

- Play "sound pattern" games such as clapping, in a simple pattern such as 1 clap, 2 quick claps; 1 clap, 2 quick claps; 1 clap, 2 quick claps or beating a drum, tapping harder on every second beat.
- If the child has low vision, use brightly coloured large beads on a black mat for good contrast and put them on a string. Make a pattern such as red green; red green; red green. Repeat the pattern three times. Have the child build the same pattern with his or her beads. Older children can continue the pattern. Patterns using object shapes such as stars, rectangles, and circles can also be used.



Giant Textured Beads
LRC-SSVI – Access *abaz*

- Blocks and pasta shapes can be made into simple repeating patterns for the child to identify and describe, to copy and extend the pattern. Once the child can recognize a pattern with two elements a third element can be added. (Red, green, orange; red, green, orange; red, green, orange …)
- Play the *'Pattern Fixer'* game (*Clements and Sarama, 2009*). Show or have the child feel a geometric pattern and chant it with them for at least 3 complete units of the pattern as they touch each shape (for example, square, triangle; square, triangle; square, triangle). Remove the last shape and ask the child through looking or touching what shape they need to fix the pattern. If the child needs help, have him or her chant the pattern as they touch each shape, allowing the pattern of the words to indicate the missing shape. For an extension activity, remove shapes from different spots in the pattern sequence.

Shape Sorting Board Kit – 1A

- Use the Chick Tac-Toe activity referenced in the resource section to create different patterns. Begin by horizontally creating a pattern with 2 elements (chick and bunny) and 3 units (chick, bunny; chick, bunny; chick, bunny). Have the child feel the pattern and repeat it. Take apart the pattern and have the child build their own.
- As you say, "jump" have the child jump. When you say, "clap" have the child clap their hands. Then make a pattern of 3 units the child listens to: "jump, clap; jump, clap; jump, clap." When you stop have the child continue or repeat the pattern. The child can pair words with actions or just say word pair patterns.
- To extend simple repeating patterns, put the following objects in a row: circle, triangle, triangle; circle, triangle, triangle; circle, triangle, triangle. Have the child continue the pattern.

7. Ordering

Ordering is the ability to order objects according to a common attribute such as size, weight or length.

First Shape Fitter LRC-SSVI
Access *arbi*

The ability to understand the concepts of patterning and ordering makes it possible for a child to repeat numbers in order and later to recognize them in order as on a calendar or number line.

A child with vision, when told that something is big and something is small, can look at the objects and see why the different descriptions are given. The child who lacks vision also needs to be able to verify the description when told something is big and something is small. This verification for a child who is blind can only be made through tactual hands-on experiences with objects and materials in the home, community, and early education environment.

Through experiences with many different objects, a child will learn to draw these conclusions:

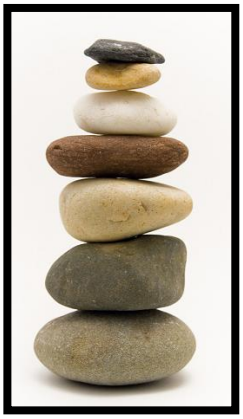
1. An orderly arrangement has a beginning and a direction that follows (left to right). Objects must be lined up in some way. Work from the child's point of view, left to right, top to bottom. Always have a model for reference.
2. A common element must be chosen for ordering (for example, size, length or weight.)

Some activities are listed below:

- Concepts could be taught through children's stories such as "The Three Bears" - Papa bear's big bowl, Mama bear's middle size bowl, and Baby bear's little bowl.

- Objects around the house or within an early education environment that could be used for ordering are as follows: clothing of different sizes, stackable measuring cups and spoons (metal and plastic); plastic bowls of different sizes; nesting cups; ring stacking toy; cereal and cardboard boxes; juice boxes; cans of different sizes (coffee can vs. soup can); different size plates (dinner, salad, saucer); one shoe from each member of the family; pots and lids of different sizes; margarine and yogurt containers; or pencils/crayons of different sizes. Place the small _____ here. Put the big _____ next.

- On a cookie sheet create a number line with black tape. Have the child place magnets in a specified order by size, from smallest to biggest on the “number-line” (use left to right progression). As the child gets older use magnetized numbers to be placed in order. “Playskool (Hasbro)” sells a print/braille set.
- Fill plastic containers with substances of different weights: for example, small rocks and marshmallows. Have the child line up the heavy one first and the light one next. Add a third later and ask the child “can you find one that is heavier or lighter than this?” You can also talk about the sounds that they make and ask, “Which one sounds softest and which one sounds loudest?”



- Using a variety of items have the child order them from shortest to longest and longest to shortest (for example, rope, ribbon, play-dough, band-aids, braille lines, sticks, pencils, straws, celery sticks ...).
- Put toy cars in order from biggest to smallest or smallest to biggest. Use any other toys that may lend themselves to this skill.

- When outdoors reinforce size words such as small, middle-size, big, with objects such as rocks, leaves, pinecones, sticks, logs, tree, shovels ...
- Talk about different heights of family members. Then help your child place the family members in order from shortest to tallest or tallest to shortest.
- For extension activities consider the following:
    - when you are reading to the child ask what comes next in a familiar story. Have them tell you what came first, second and third.
    - have the child order 3 objects by size. Start with 3-dimensional objects before moving to 2-dimensional shapes or pictures. When the child is successfully ordering 3 objects hand them another object and ask them where to place it in sequence. Mix them up and repeat the process. After 4 objects have been mastered add a 5th.

Patterning and Ordering Books

The Three Bears	***The Three Billy Goats Gruff***
The Three Little Pigs	***Is the Blue Whale the Biggest Thing*** **by Robert Wells**
Much Bigger than Martin **by Steven Kellogg**	***The Biggest House in the World*** **by L. Lionni**
The Biggest Nose **by Kathy Caple**	***The Biggest Pumpkin Ever*** **by Steven Kroll**
The Giant Jam Sandwich **by John Vernon Lord**	***The Line Up Book*** **by Marisabina Russo**
The Longest Noodle **by S. Wright & E. Pester (APH)**	***The Littlest Pumpkin*** **by S. Wright (APH)**
That Terrible Awful Day **by S. Wright (APH)**	***Pattern (Math Counts)*** **by Henry Arthur Pluckrose**
I See Patterns **by Linda Benton**	***Clap Your Hands*** **by L. B. Cauley**

8. Time Concepts

At this stage children experience time as a sequence of events. Initially these events consist mainly of having physical needs met such as breakfast, getting dressed, lunch, nap time, and bath time. At first, the succession is remembered for the immediate event. Then the child may be able to remember what comes before or what comes just after. Gradually memory for events will expand and extend over longer periods of time, for example: what presents the child got for Christmas or a birthday; a holiday at the beach; or a visit with Grandma. Young children develop an understanding of time by connecting it in ways that have meaning for them.

Some activities are listed below:

- After specific events that happen in a child's day ask "What did you just do?" For example, after meals, watching T.V, playing with a friend, attending or having a birthday party, playing with a toy, getting dressed or coming home on a bus from an early childhood program.
- Talk about what they did today, last night, yesterday and what they will do tomorrow. "Remember yesterday, we went to the zoo, today we are going to the park to play on the swings. Tomorrow is Monday, that's when we'll make cookies (do laundry ...)."

Classroom Calendar Kit
LRC-SSVI – Access *aqwe*

- Introduce the child to his own calendar (made or purchased). Put stickers on special days – birthdays, and other events. The child can mark off and count the days until the important event.

- Morning is a good time for children to learn that some things take longer than others. Use an auditory timer that is set to a given number of minutes to see if the child can get dressed in that amount of time. This can also be used in an early education program as a child dresses for a play break.
- Next use timers/clocks and discuss with the child how long they think it will take to do a task (dressing, making his or her bed?). It is important to expose the child to analog clocks. Which do you think takes longer – your favorite computer game or eating a cookie?
- Throughout the day, ask the child if it is morning, afternoon, or night.
- Have a talking alarm clock (available from the CNIB store) in the child's bedroom. Before going to bed talk to the child about the time that he or she will be getting up tomorrow or in the morning. Set the alarm. This can also be used in the classroom by setting the time and alarm for specific activities such as snack/recess. The Time Teacher Clock shown in the picture is from Exceptional Teaching, Inc. Count out evenly "1 second, 2 seconds…." as the child gets dressed to see how many seconds it takes them to put on their shoes. The child will hear the numbers which will help them learn to count and they will begin to develop a sense of duration.

- Discuss the events of the day. Use words such as before, after, first, next, last, soon, and later. For example, first we eat breakfast, next we wash our hands, and after we go to the playground. Knowing what comes next helps the child have structure and feel secure and confident.
- For the child with low vision, a picture that was taken of an event/holiday that they participated in can provide a clue for assisting them in understanding time and event relationship. "That is a picture of you yesterday at the birthday party."
- For a child who is blind, an object souvenir representing the event/holiday will assist them in understanding time and event relationships. An object souvenir serves the same reminder

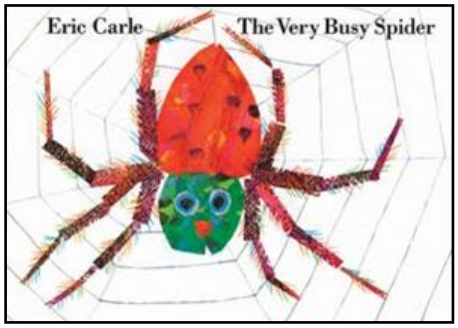
of the event to a child who is blind as a picture does for a child with low vision.

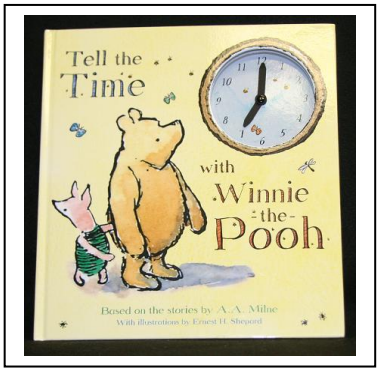
- Take 3 photographs of the child doing 3 different daily activities at different times of the day (morning, noon, late afternoon or evening). Talk to the child about when they occurred.
- A higher level time concept skill is being able to construct the series of events that the child participated in from 3 pictures. The child will need to think about what happened first, next, and last without any clues. Ensure that pictures are large, simple, well contrasted and are non-glare. For a child who is blind this type of activity would require a verbal explanation. This is a more challenging skill than using the picture cues and may be mastered at a later date.

Talking Clever Clock
Exceptional Teaching, Inc.

Time Books

A Year In The Country **by Douglas Florian**	***Clocks and More Clocks*** **by Pat Hutchins**
Cookies Week **by Cindy Ward**	***The Doorbell Rang*** **by Pat Hutchins**
The Very Busy Spider **by Eric Carle**	***Today's Monday*** **by Eric Carle**
Time (Math Counts) **by Henry Arthur Pluckrose**	***Tell the Time with Winnie the Pooh*** **by A. A. Milne**





9. Measurement/Comparing

"Children identify objects as "the same" or "different", more or less, on the basis of attributes that they can measure. They identify measurable attibutes such as length and weight and solve problems by making direct comparisons of objects on the basis of those attributes." *(Clements and Sarama, 2009).*
Children learn measurement by making informal comparisons of length and mass. Young children use nonstandard units to make numerical comparisons. For example, the toy car is three Lego pieces long. A child with low vision may hold up two crayons and tell you which is longer/shorter when involved in a colouring activity. A child with less sight may tell you that their spoon/cup is smaller when helping to set the table.

With many different objects in a variety of situations, teachers and parents will need to introduce and reinforce comparison words such as bigger/smaller, longer/shorter, heavier/lighter, and faster/slower. The materials listed in the resource section will assist the process but structured experiential learning is just as powerful (a trip to the grocery store becomes an opportunity to compare the size of a litre of juice to a small juice box).

Some activities are listed below:

- "Put one ball in the bucket. Take it out, now the bucket is empty." Repeat many times.
- Have the child help feed the dog, use words like "add a little more" or "the bowl is full."
- On a nature walk compare two stones with the following comparisons: heavy/light, small/big, smooth/rough. Use sticks to compare long/short. Talk about which ones are longer, shorter than the other.
- Have the child guess who is tallest in the classroom/family. Have the child tell you why they think that person is the tallest.

1-2-3-4-5

- Compare sizes of measuring cups or pots in the kitchen. Have the child use measuring words like big and little.
- Have the child put blocks in a large container and also blocks in a small container. Talk about which has more. Count how many the big container holds then how many the small container holds. Emphasize the words more/less.
- In the bath compare sizes of soap (which is smaller) or shampoo bottles (which is bigger or if there are 3 bottles, which is biggest).

- In a grocery store compare the size of a melon to an apple using bigger/smaller.
- Children can use their fingers and hands to measure an object. "How many hands high is your teddy bear?"

- Have children measure a room in number of steps it takes to go across.
- Use blocks, string, paper rolls or small toys to see how long something is (table, sofa, TV).
- Compare items using heavy/light, big/little, same/different. For example, as you are preparing a snack or meal talk about how much larger and heavier an orange is than a grape or a can of soup and a pencil. Let the child handle the items to compare.

- Provide opportunities for the child to explore the family vehicle inside and out. Compare the size of different parts of the vehicle with a toy one.
- Build 2 towers of different heights first using empty yogurt containers and then blocks. Have the child compare sizes (taller/shorter). Repeat many times with different heights.
- Show the child 2 containers; a garbage can and a glass. Ask the child which holds more and why?

1-2-3-4-5

- For each of the following statements have the child tell you if it is possible or impossible.

✓ A toy car is heavier than my dad.

✓ My thumb is longer than my leg.

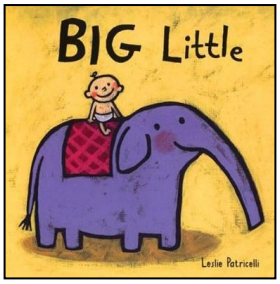
✓ My mom's bed is bigger than my bed.

✓ A child could lift a bus.

✓ A baby doll's shoe would fit on your foot.

Size Books

BIG Little **by Leslie Patricelli**	***The Biggest Nose*** **by Kathy Caple**
Big Sarah's Little Boots **by Bourgeois & B. Clark**	***The Biggest Pumpkin Ever*** **by Steven Kroll**
Is a Blue Whale the Biggest Thing? **by Robert Wells**	***The Giant Jam Sandwich*** **by John Vernon Lord**
Much Bigger Than Martin **by Steven Kellogg**	***The Grouchy Ladybug*** **by Eric Carle**
Short and Tall **by Richard Scarry**	***The Line Up Book*** **by Marisabina Russo**
The Biggest House in the World **by L. Lionni**	***Little Quack*** **by L. Thompson**
Size (Math Counts) **by Henry Arthur Pluckrose**	***Three Billy Goats Gruff***
The Little Mouse, the Ripe Strawberry and the Big Hungry Bear **by D. Wood & A. Wood**	***The Entsy, Weensty Spider Finger Plays and Action Rhymes*** **by J. Cole and S. Calmenson**
The Teeny-Tiny Woman **by P. Galdone**	***The Big Baby Bear Book*** **by J. Prater**
Soft Shapes Big and Little **Innovative Kids**	***Clifford The Big Red Dog*** **by N. Birdwell**

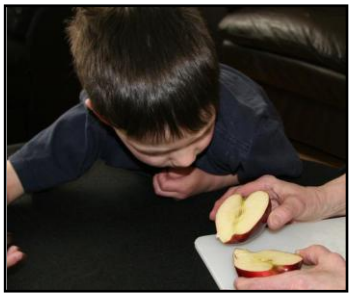


10. Beginning Fractions

Young children are exposed to fractional (part-whole) concepts very early through everyday activities particularly with food. The first part-whole concept is usually one-half.

Some activities are provided below:

- Use real food to teach the concept of whole or half. Have the child look, touch and smell a whole orange or apple. Then cut the fruit in half. Have the child take the pieces apart and put them back together. Say "here are two pieces and each piece is called one-half." When the child puts them back together say, "The apple is now whole again." Real foods/objects are ideal for fraction activities, however, commercially available velcro fruit/vegetable sets can be purchased. The sets velcro together and children use a plastic knife to separate the whole into parts.
- With the child cut various items in half (paper plate, whole piece of paper, piece of toast, a card) to create 2 parts. The pieces can be put back together to clearly depict the half versus the whole concept. Also use wooden form boards or puzzles to put together two halves of a circle to make a whole.
- Use familiar and favorite food items to talk about the fraction, one-half. For example, "I am going to cut the apple into two pieces. "I will give you one-half and I will have the other half."



1-2-3-4-5

Use the Birthday Cake activity listed in the resource section to have a pretend birthday party. The child can invite dolls or stuffed animals to the party. The child can cut the cake into pieces and share with the "friends" at the table. Other food items that can be used include: cookies, bananas, oranges, sandwich ...

- To illustrate the concept of part-whole, cut a piece of toast/bread/cheese/cake into 3 and give one piece each to 3 people and say, "one piece for me, one piece for Johnny and one piece for you." You can also add 3 scoops of ice cream to a bowl or a cone, and as each scoop is added say "I am putting 1, 2, 3 scoops of ice cream on/in the cone/bowl. Let's each eat one scoop." Use the Ice Cream Cone activity listed in the resource section to have a play ice cream day. The child can do the activity with friends or with pretend friends or with dolls.

11. Recognizing Numbers in Print and/or Braille

At this age children vary in their ability to identify numerals. It is more important for them to first understand that numbers represent quantities concretely and pictorially. An exposure to recognizing numbers in print or braille symbolically in the child's environment is the focus of this section.

Some activities are listed below:

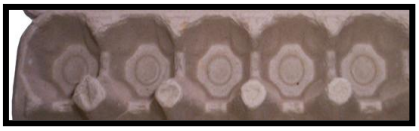
- Children who will be using braille need to be introduced to the braille number sign and later to Nemeth numbering system (school age). The young child needs to be exposed to early number and counting books in addition to having hands-on activities.
- Use flash cards to pair the number of objects to the corresponding number card up to 3. For the child who is blind, you will need to ensure that a braille number has been added. Repeat this many times with the number and different objects to reinforce the concept. When the child has developed an understanding of the concept move on to the next step.

Flash Cards #1 – 15 – Kit 1B
(with pictures and numbers)

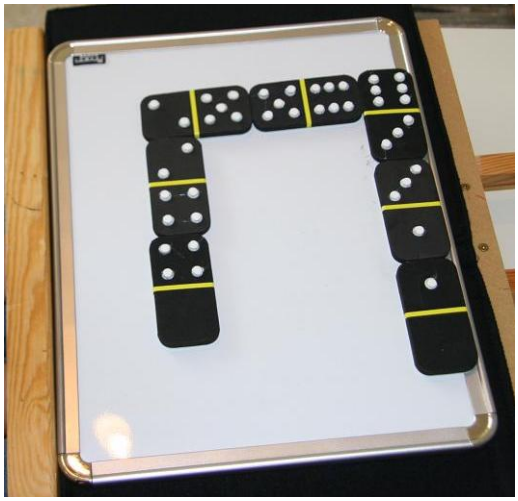
- Using a set of number cards, 1-3, have the child place a magnet on a cookie sheet that corresponds to the print/braille number card. Present in different sequences until there is mastery.
- Repeat this sequence using numbers up to 10 or more depending on the child's understanding and demonstration of mastery.

1-2-3-4-5

- There are several activities in the resource section to reinforce the concept of number recognition. For example: the Stack & Sort Board, Tactile Math Counting Sheets, Flash Cards and Puzzles.
- Make a simple number bingo card (1-10). Make your own number cards with as few or as many numbers as the child can handle.
- Play dominoes using a teacher prepared large tactile dominoes set. See picture below. This set was made using black foam, raised white foam dots and a raised middle line.
- Using an egg carton or muffin tin put a braille/print number in each compartment. Have the child put the correct number of counters/pennies in each.
- Cut an egg carton if numbers 1-5 are being worked on (count horizontally and vertically). Cut and tape together egg cartons if counting 1-20.



- Play board games with spinners to show how many spaces to move. American Printing House for the Blind (APH) has several to choose from. Children's games such as Hi Ho Cheerio, 1 2 3 Duck, Snakes and Ladders, and Candyland are available at most large stores and can be easily adapted for children who are blind.



Large Tactile Dominoes Set (teacher prepared) (Use on a white board or cookie sheet.) Kit 1B

Bingo Cards - Kit 1B

12. Verbal Addition and Subtraction to 5

"By two years of age, children show signs of knowing that adding increases, and taking away decreases, quantity." *(Clements and Sarama, pg. 59).*

Children who are blind/visually impaired do not learn these concepts incidentally. Hands-on experiences using manipulatives are the key to learning for children who are blind/visually impaired in order for them to have the same experiences and understanding as their sighted peers.

Some activities are listed below:

- Give the child three objects (toys, food items, clothing) and then add one more emphasizing now you have "more." Take one away and say, "now you have less." Repeat this in many different situations and environments with a variety of objects.
- Explain to the child that less means a smaller number, and more means a bigger number. Illustrate this concept with many concrete examples. At snack time, put a different number (1-5) of apple slices on each of two plates. Count the slices and discuss which plate has more and which has less.

Using the Cheerios Play Book.

- Explain to the child that to add means to put together.
  Model counting out sets, or groups, of small items and putting them together.
  Point to each item as you say, "I have one raisin, two raisins. Now I will add one more. I have one, two, three raisins in all." Have the child repeat the process for counting out sets of different combinations up to 3. Increase to 5 when the child is ready.

1-2-3-4-5

- Give the child 2 cars (blocks, cookies ...). Hand the child one more. Have the child put it with the other 2 cars. Ask the child to count how many he or she has altogether now. Increase to 5 as the child is ready.
- Using the Wikki Stix activity board place 2 blocks on the left of the board. Place a vertical Wikki Stix line in the middle of the board. Hand the child one more to put on the right of the Wikki Stix. Ask the child to count how many they have altogether now. Increase to 5 as the child is ready.

Wikki Stix – Kit 1B
www.wikkistix.com/

- A good place to start building money awareness is with coins that reinforce counting from 1-5. Begin by having the child feel the smooth edges and sides of a penny. Count pennies up to 3 and then add 1 or 2 more. Have the child tell how many there are altogether.

- Meals or snack time are great times to practice subtraction. For example, ask the child to help you count out the number of rolls in a bread basket or the number of celery sticks on a plate. Say “there are 3 (up to 5) rolls in the basket. I am going to take away one and put it on my plate. How many rolls do you think will be left?” Have the child count the rolls left in the basket to check their answer.
- The child needs to understand the concept of adding before you introduce the concept of taking away, or subtracting.
- Use the Pizza Party, Birthday Cake, Ice Cream Cone activities, and magnets to further develop verbal addition and subtraction concepts.

1-2-3-4-5

- Place 3 apples (cars, blocks, balls, cookies ...) in front of the child and have the child count them. Ask the child to give you one apple. Once it is removed, have the child count how many are left.
- Set up a pretend store with items that the child can purchase with their pennies. Start out with 3-5 pennies and have them purchase items that cost 1 or 2 cents. The child then has to count how many pennies are left.

Pizza Party – Kit 1B

SECTION 4

LINKING MATHEMATICS & LITERACY THROUGH SONGS & RHYMES

Math Songs & Rhymes

In addition to developing oral language and listening skills and the exploration and development of mathematical concepts and skills, many songs and rhymes engage children in fine motor and gross motor activities.

Math songs & rhymes:

- actively engage children in oral language.
- help to develop both listening to and repeating language patterns.
- with actions allow children to attach meaning to oral language. Using a hand under hand approach (adult stands behind the child), demonstrate the actions with the child. You might have the instructor demonstrate with the child who is visually impaired or blind, the actions for the other children.
- involve counting, number concepts, measurement concepts and simple addition or subtraction.
- involve rhyming patterns, rhythms, and repetition which allow children to build fundamental understandings of the structures, purposes, and sounds of language.
- include number concepts which allow children to build understanding of basic mathematical concepts while building their facility with oral language.
- are fun, engaging, and motivating for young learners.

1-2-3-4-5

Some age appropriate songs and rhymes are listed below:

Here Is The Beehive 	***Actions*** 
Here is the beehive	*Hold out a fist.*
But, where are the bees?	*Hold out hands like you are wondering where they are.*
Hidden away where nobody sees.	
Look and you'll see them come out of their hive	*Try to look into your closed fist that is the hive.*
One 	*Bring one finger out of the fist.*
Two 	*Bring two fingers out of the fist.*
Three	*Bring three fingers out of the fist.*
Four	*Bring four fingers out of the fist.*
Five	*Hold up all five fingers.*
Buzzzzzzzzzz.	*Tickle the child.*

Five Little Fat Peas	***Actions***
Five little fat peas in a pea pod	*Children hold hand in a fist*
One grew, two grew, so did all the rest	*Put thumb and fingers up one by one*
They grew and grew	*Raise hand in the air very slowly*
And did not stop, Until one day	
The pod went POP!	*Children clap hands together*

1-2-3-4-5

Ten Fingers	***Actions***
I have ten fingers	*Hold up both hands, fingers spread*
And they all belong to me	*Point to self*
I can make them do things -	
Would you like to see?	
I can shut them up tight	*Make fists*
I can open them wide	*Open hands*
I can put them together	*Place palms together*
I can make them all hide	*Put hands behind back*
I can make them jump high	*Hands over head*
I can make them jump low	*Touch floor*
I can fold them up quietly	*Fold hands in lap*
And hold them just so.	

Three Little Nickels **(A fingerplay)**	***Actions***
Three little nickels in a pocketbook new	*Hold up three fingers* 
One bought a peppermint, and then there were two	*Bend down one finger*
Two little nickels before the day was done,	
One brought an ice cream cone, and then there was one	*Bend down another finger*
One little nickel I heard it plainly say,	
“I’m going into the piggy bank for a rainy day!”	

1-2-3-4-5

Five Little Froggies	***Actions***
Five little froggies sat on a shore.	*Children crouch in a row like frogs.*
One went for a swim, then there were four.	*First frog leaps and swims off.*
Four little froggies.	*Children crouch in a row like frogs.*
Looked out to sea.	*Children put hand at brow and look out to sea.*
One went swimming, and then there were three.	*Second frog leaps and swims off.*
Three little froggies said "What can we do?"	*Children crouch, and repeat.*
One jumped in the water, then there were two.	*Third frog leaps and swims off.*
Two little froggies sat in the sun.	*Children crouch.*
One swam off, and then there was one.	*Fourth frog leaps and swims off.*
One little froggie said "This is no fun!"	*Child crouches and repeats.*
He dived in the water, and then there were none!	

Four Candles on a Birthday Cake	***Actions***
Four candles on a birthday cake.	*Hold up fingers and count them.*
All lit up for me.	*Wiggle all four fingers.*
I'll make a wish and blow them out.	*Close eyes like you're making a wish.*
Watch and you will see.	*Blow on fingers and curl them into a fist.*
Adjust number to child's age.	

1-2-3-4-5

This rhyme can be adapted to use the age of the child you are working with. Use hand under hand assistance to model for the child who is blind or has difficulty with motor skills.

Five Little Fishies	***Actions***
Five little fishies swimming in a pool.	*Wiggle five fingers.*
The first one said, “The pool is cool.”	*Show one finger, then wrap arms around body.*
The second one said, “The pool is deep.”	*Show two fingers, then hands measure ‘deep’.*
The third one said, “I want to sleep.”	*Show three fingers, then rest head on hands.*
The fourth one said, “Let’s take a dip.”	*Show four fingers, then hands ‘dive’ into water.*
The fifth one said, “I spy a ship.”	*Show five fingers, then form scope with hands to peer through.*
Fisher boat comes,	*Form ‘V’ with fingers, then move hands away from body.*
Line goes kersplash.	*Pretend to throw fishing line.*
Away the five little fishies dash.	*Wiggle five fingers away.*

Rainbow Song

Rainbow purple
Rainbow blue
Rainbow green
And yellow too
Rainbow orange
Rainbow red
Rainbow shining over head.

Come and count
The colors with me
How many colors
Can you see?
1-2-3 on down to green
4-5-6 colors can be seen

Rainbow purple
Rainbow blue
Rainbow green
And yellow too
Rainbow orange
Rainbow red
Rainbow shining over head.

One, One, the Zoo is Lots of Fun

One, one,
The zoo is lots of fun

Two, two,
See a kangaroo

Three, three,
See a chimpanzee

Four, four,
Hear the lions roar

Five, five,
Watch the seals dive

Six, six,
There's a monkey doing tricks

Seven, seven,
Elephants eleven

Eight, eight,
A tiger and his mate

Nine, nine,
Penguins in a line

Ten, ten,
I want to come again!

1-2-3-4-5

A Little Ball **(A fingerplay)**	***Actions***
A little ball	*Circle with thumb and finger*
A bigger ball	*Circle with two hands*
A great big ball I see	*Circle with both arms overhead*
Let's count the balls I made – 1, 2, 3	

1, 2 Take Off My Shoe	***Actions***
One, two take off my shoe.	*Pretend to take off shoe.*
Three, four shut the door.	*Pretend to close the door.*
Five, six, pick up sticks.	*Pretend to pick up sticks.*
Seven, eight lay them straight.	*Pretend to lay sticks straight.*
Nine, ten a big, fat hen.	*Use hands to show a fat hen.*

The Apple Tree **(A fingerplay)**	***Actions***
Way up high in the apple tree,	*Point up high*
Two little apples smiling at me;	*Make two circles with hand*
I shook that tree as hard as I could;	*Wrap hands around "trunk" and shake*
Down came the apples and	*Two circle hands come down*
Mmmmmm, they were good! 	*Rub tummy*

1-2-3-4-5

Five Ripe Apples	***Actions***
Five ripe apples up in a tree,	*Hold five fingers up; make a tree with body and arms*
One looked down and smiled at me,	*Look down and smile*
So I twisted that apple as hard as I could	*Stretch arm up high and twist hand*
Yum! Yum! It was good!	*Pretend to bite apple and rub tummy*
Repeat verses and motions, counting down your fingers	
One last apple up in a tree,	*Hold one finger up; make a tree with body and arms*
It looked down and frowned at me,	*Look down frowning*
I twisted the apple as hard as I could,	*Stretch arm up high and twist hand*
Eeww! It was rotten!	*Grimace at the rotten apple in hand*

Favorite Foods **(A fingerplay)**	***Actions***
I like watermelon, how about you?	
Let's eat and eat until the day is through!	*Eating motions*
Oh, I think I've had enough,	*Hands on tummy*
Let's try something different	
Let's go out and play!	
Substitute other foods that the child likes.	

1-2-3-4-5

Five Little Monkeys	***Actions***
Five little monkeys jumping on the bed One fell off and bumped his head **So Momma called the doctor and the doctor said** **No more monkeys jumping on the bed!**	*Hold up five fingers* *Rub head* *Swing index finger back and forth*
Four little monkeys jumping on the bed One fell off and bumped his head (Repeat rhyme.)	*Hold up four fingers* *Rub head* *Swing index finger back and forth*
Repeat rhyme to last monkey.	*So Momma called the doctor and the doctor said* *No more monkeys jumping on the bed!*
Three little monkeys jumping on the bed One fell off and bumped his head	*Hold up three fingers*
Two little monkeys jumping on the bed One fell off and bumped his head	*Hold up two fingers*
One little monkey jumping on the bed He fell off and bumped his head	*Hold up one finger*
No little monkeys jumping on the bed None fell off and bumped his head So Momma called the doctor and the doctor said Put those monkeys back in bed!	*Pretend to tuck child in bed.*

My Hands	***Actions***
On my head my hands I place.	*Place hands on head.*
On my shoulders,	*Place hands on shoulders.*
On my face,	*Place hands on face.*
On my hips,	*Place hands on hips.*
And at my side,	*Drop hands to sides.*
Then behind me they will hide,	*Hide hands behind back.*
I will hold them up so high,	*Raise hands high above head.*
Quickly make my fingers fly,	*Wiggle fingers.*
Hold them out in front of me,	*Hands in front of body, arms extended.*
Swiftly clap them. One, two, three!	*Clap, clap, clap.*

1-2-3-4-5

This rhyme introduces the concept of money.



Five Cookies	***Actions***
Five little cookies in the bakery shop.	*Hold up five fingers*
Shining bright with the sugar on top.	*Pretend to sprinkle sugar on top*
Along comes (child's name) with a nickel to pay	*Hold up a real nickel* 
He/she buys a cookie and takes it away.	*Pretend to put cookie behind back or eat it*
(Continue with four, three, two, and one).	

Ten in a Bed	***Actions***
There were ten in a bed and the little one said	
"Roll over, roll over"	*Rolling motion*
So they all rolled over and one fell out.	
There were nine in the bed and the little one said,	
"Roll over, roll over"	*Rolling motion*
So they all rolled over and one fell out ….	
This is repeated until you get to the number one. Each time "roll over" is said, rolling motion is dramatized.	
There was one in the bed and the little one said,	
"Good night!"	

1-2-3-4-5

Squirrels **(Counting Poem)**	***Actions***
Five little squirrels sitting in a tree.	
The first one said; "What do I see?"	
The second one said, “Some nuts on the ground.”	
The third one said, “Those nuts I found.”	
The fourth one said, “I’ll race you there.”	
The fifth one said, “All right, that’s fair.”	
So they shook their tails and ran with glee.	
To the nuts that lay at the foot of the tree.	

Five Little Babies **(A fingerplay)**	***Actions***
One little baby	*One finger*
Rocking in a tree.	*Rocking motion with arms and hands*
Two little babies	*Two fingers*
Splashing in the sea.	*Splashing motion*
Three little babies	*Three fingers*
Crawling on the floor.	*Crawling motion with hands and arms*
Four little babies	*Four fingers*
Banging on the door.	*Pounding motion with fists*
Five little babies	*Five fingers*
Playing hide-and-seek.	
Keep your eyes closed tight now,	
Until I say PEEK!	*Cover eyes and peek*

Orientation and Mobility Concepts

The following rhymes and actions will help to teach students with visual impairment or blindness orientation and mobility skills. Some of these concepts include: identifying body parts, demonstrating left/right, up/down, forwards/backwards, big/little, over/under, narrow/wide, and high/low, front/back, and top/bottom.

Perkins Panda
http://www.perkins.org/

Orientation is knowing where you are, where you want to go, and how to get there.
Mobility is the actual physical movement of getting from one place to another.
Great for teaching directions.

Up to the Ceiling	***Actions***
Up to the ceiling,	*Reach both hands up to the sky*
Down to the floor.	*Put both hands down to the floor*
Left to the window,	*Point to the left*
Right to the door.	*Point to the right*

Two Little Hands	***Actions***
Two little hands go clap, clap, clap	*Act out the actions as you say them* 
Two little feet go tap, tap, tap,	
One little body turns around,	
One little body sits quietly down.	

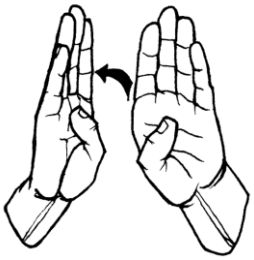
1-2-3-4-5

Right or Left	***Actions***
Up goes my right hand way up high	 *Lift right hand up*
Up goes my left hand pointing to the sky	*Lift up left hand and point to sky*
Down comes my right hand Down to my toe	*Bring right hand down so it points to toe*
Down comes my left hand Slowly, slow, slow!	*Slowly bring left hand down to side*
Right hand	*Hold it out with palm up*
Left hand	*Hold it out with palm up*
Swing them both around	*Roll arms around each other*
Put your fists together and Pound, pound, pound!	*Make fists and pound them on top of each other.*

Teddy Bear	***Actions***
Teddy bear, teddy bear	*Turn around*
Teddy bear, teddy bear	*Touch the ground*
Teddy bear, teddy bear	*Yet it's true*
Teddy bear, teddy bear	*I love you.*
Teddy bear, teddy bear	*Climb the stairs*
Teddy bear, teddy bear	*Say your prayers*
Teddy bear, teddy bear	*Turn off the light*
Teddy bear, teddy bear	*Say goodnight!*

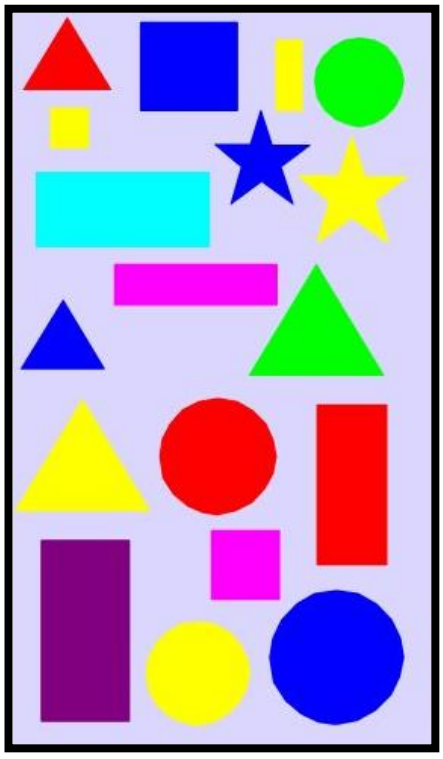
1-2-3-4-5

Open, Shut Them Action Song	***Actions***
Open, shut them; open, shut them;	
Give a little clap.	
Open, shut them; open, shut them	
Lay them in your lap.	
Creep them, creep them slowly upward	
To your rosy cheeks.	
Open wide your shiny eyes	
And through your fingers peep.	
Open, shut them, open, shut them;	
To your shoulders fly.	
Let them, like the little birdies,	
Flutter to the sky.	
Falling, falling, slowly falling,	
Nearly to the ground,	
Quickly raising all your fingers,	
Twirling them around.	
Open, shut them; open, shut them;	
Give a little clap.	
Open, shut them; open, shut them;	
Lay them in your lap.	



1-2-3-4-5

Shapes	***Actions***
Draw a circle, draw a circle	*Trace circles in the air*
Round as can be	
Draw a circle, draw a circle	*Traces circles in the air*
Just for me	*Point to self*
Draw a square, draw a square	*Trace a square*
Shaped like a door;	
Draw a square, draw a square	*Trace a square*
With corners four,	*Show four fingers*
Draw a triangle, draw a triangle	*Trace a triangle*
With corners three,	*Show three fingers*
Draw a triangle, draw a triangle	*Trace a triangle*
Just for me.	*Point to self*



1-2-3-4-5

High, Low, Narrow and Wide	***Actions***
This is high,	*Stretch hands over head*
And this is low,	*Bend and touch floor*
Only see how much I know	
This is narrow,	*Put hands close together*
This is wide,	*Hold hands at arms length*
Something else I know besides.	
Up is where the birds fly free,	*Point up*
Down is where my feet should be	*Point down*
This is my right hand, as you see,	*Hold up right hand*
This is my left hand, all agree,	*Hold up left hand*
Overhead I raise them high,	*Raise hands over head*
Clap 1, 2, 3	*Clap 3 times*
And let them fly.	*Clap hands and flutter hands away*



Size	***Actions***
A great big ball,	*Make a circle with hands over head*
A middle-sized ball,	*Make a circle by touching fingers and thumbs of both hands together*
A little ball I see.	*Make a circle with thumb and index finger*
Let's see if we Can count them:	
One, two, three	*Repeat motions above*

The best and most beautiful things in life cannot be seen, not touched, but are felt in the heart.

Helen Keller