

Kindergarten Introduction

This is a Nemeth curriculum that will support math instruction, but not replace the math curriculum.

Modules

- Review of Numbers 0-10 and Tally Marks
- Numbers 11-15 and General Omission Symbol
- Numbers 16-20, Mathematical Comma, and Punctuation Indicator
- Building Towards the Braille Hundreds Chart
- Equations, Addition, and the Braille Hundreds Chart
- Subtraction, Geometry, and an Introduction to the Ellipsis

Symbols and Concepts

- Counting to answer "how many"
- Count aloud to 50 (and then 100) beginning with 1
- Count aloud to 50 (and then 100) beginning with different numbers
- Skip count by 10s beginning with 10
- Skip count by 10s beginning with different numbers
- Opening Nemeth Code indicator
- Nemeth Code terminator
- Numeric indicator
- Numbers 0-100
- Tally marks
- General omission symbol
- Mathematical comma
- Ellipsis
- Plus sign
- Equals sign
- Minus sign
- Equations in a horizontal format
- Numbering of math problems from 1-20, including the punctuation indicator and period
- Numerical order
- Represent numbers 1-20 with concrete materials, including base ten blocks or Digi-Blocks
- "One more" and "one less"
- Patterns that incorporate the general omission symbol
- Missing numbers in a pattern of numbers represented by the ellipsis

- Decompose numbers less than or equal to 5 (and then 10)
- Add within 5 (and then 10)
- Subtract within 5 (and then 10)
- Shapes

Objectives

The student will be able to:

- Tactually identify and read the numeric indicator and numbers from 0-100
- Tactually identify the tally mark, general omission symbol, plus sign, minus sign, equals sign, mathematical comma, punctuation indicator, and ellipsis
- Use the braillewriter to write the numeric indicator and numbers 0-20
- Use the braillewriter to write the tally mark, general omission symbol, plus sign, minus sign, equals sign, mathematical comma, punctuation indicator, and ellipsis
- Tactually read unnumbered and numbered equations in a horizontal format
- Use the braillewriter to write equations in a horizontal format
- Represent a given number ranging from 1-20 by making a set of tally marks
- Represent numbers 1-20 with concrete materials, including base ten blocks or Digi-Blocks
- Count to answer "how many" questions about as many as 20 objects arranged in a line or rectangular array
- Count to answer "how many" questions about as many as 20 tally marks (in groups of 5) arranged in a line or rectangular array
- Identify a number that is "one more" or "one less" than a given number, ranging from 1-100
- Use the braillewriter to number math problems from 1 – 20
- Count aloud to 50 (and then 100) beginning with 1 and with different numbers
- Using a braille chart, skip count by 10s through the last row in the chart, beginning with different numbers
- Place numbers 1-50 (and then 100) in order on a grid board
- Locate numbers 1-50 (and then 100) on a braille chart
- Represent addition and subtraction to 5 (and then 10) with objects, acting out situations, five frame, ten frame, and verbal explanations
- Decompose numbers less than or equal to 5 (and then 10) in more than one way by using objects, tactile representations, five frames, ten frames and/or a braillewriter

- Fluently add and subtract within 5, including with equations in a horizontal format
- Use the braillewriter to write the first three missing numbers in a list of missing numbers ranging from 0-20 represented by an ellipsis
- Use a braille hundreds chart to verbally identify the first three missing numbers in a pattern of numbers ranging from 0-100 represented by an ellipsis
- Tactually identify circle, triangle, rectangle, and square regardless of size and orientation
- Verbally describe circle, triangle, rectangle, and square

Other ECC Skills Addressed

Note: ECC stands for Expanded Core Curriculum.

- Listening skills
- Following directions
- Taking turns
- Concept development
- Tactual discrimination
- Left-to-right tracking
- Hand positioning
- Light touch (as opposed to scrubbing)
- Scan and interpret tactile graphics used in math
- Taking turns
- Organization
- Career exploration
- Recreation and leisure

Curriculum Documents

- Teacher guide
- Module content (available for download as a PDF document)
- Answer key for exercises within module
- Teacher materials for administering check-up
- Student braille materials for check-up
- Answer key for check-up
- Teacher recording sheet
- Braille documents available within the curriculum
 - Student braille materials for module
 - Student braille materials for check-up
 - Place Value Chart 1
 - Bingo Card

- Five frame and ten frame (or Tactile Five and Ten Frames from the American Printing House for the Blind [APH])
- Ten Frame Activity
- Maze
- Cumulative checklist
- Review activities
- Pretest and posttest

It is recommended that the pretest be used to establish a baseline of Nemeth skills. It is also recommended that the check-ups, pretest, and posttest be completed across multiple sessions. Once a student misses a question 3 times in a row within a part of an assessment, it is suggested that you move to the next part at that point.

If students are proficient in reading and writing numbers from 0-10, you may elect to begin with Module 2. If students are proficient with additional skills, you may elect to begin with Module 3 or higher.

Required Materials

- Braillewriter
- Braille paper
- Index cards
- Timer
- Work and/or sorting trays
- Unifix or snap cubes (or other cubes that can be snapped together)
- Variety of small objects, scented stickers, tactile stickers, and/or textured paper
- Glue stick
- Empty container
- Base ten blocks in different containers, baskets, or bowls (or Digi-Blocks)
- The story "The Lost Button" from **"Frog and Toad Are Friends"** by Arnold Lobel
- Buttons that are tactually distinctive
- Bag that will hold approximately 20 buttons
- Grid board (either the Grid Board from the APH Hundreds Board and Manipulatives Kit or one that you create)
- Number cards from 1-100 that fit onto the grid board (either the Numbers Set from the APH Hundreds Board and Manipulatives Kit or a set of number cards that you create)
- Counting bears and/or pennies in a bowl
- Several 2-dimensional circles, triangles, rectangles, and square available in or created from:

- APH MathBuilders, Unit 1: Matching, Sorting, and Patterning Kit
- APH MathBuilders, Unit 6 Geometry Kit
- APH Focus in Mathematics Kit
- APH Feel 'n Peel Sheets: Carousel of Textures

Optional Materials

- Nonslip surface such as rubber shelf liner
- Grease marker or crayon to circle or underline answers
- Popsicle sticks, straws, sticks, stick pretzel, etc. when practicing tally marks
- Bingo cards
- Timer
- Small storage boxes
- Pushpins on a cork board
- Velcro
- Magnetic counters on a cookie sheet or magnetic board
- Construction paper and graphic art tape (or other materials needed to create a grid board)
- Number board (either the Number Board from the APH Hundreds Board and Manipulatives Kit or one that you create)
- APH Consumable Hundreds Chart
- Small pieces of Wikki Stix®
- Abacus

Teaching Tips

- Before opening any BRF files in Duxbury,
 - Go into the Global menu.
 - Select "**Formatted Braille Importer.**"
 - Select the box for "**Read formatted braille without interpretation**" at the top of the window. This will ensure that nothing is changed when opening the BRF files.
- All braille files in the curriculum are formatted with a 32-cell width by default.
- If the student has not been exposed to the Nemeth numbers 0-10 yet, use the Pre-Kindergarten curriculum in order to teach the numbers 0-10 before beginning the Kindergarten modules.
- Administer the pretest before beginning. This will provide important information about pre-existing knowledge of the Nemeth symbols addressed in the modules and guide instruction.

- If the student has completed the Pre-Kindergarten curriculum yet continues to experience difficulty reading and writing any of the numbers, you may use activities from the Pre-Kindergarten curriculum to teach and/or reinforce the numbers 0-10.
- Pay attention to the child's hand movements. Give help and model tracking if the student does not use both hands or if the student does not move both hands smoothly from left to right.
- Encourage a light touch. This will help in tactile identification and increase reading speed.
- If needed, the APH swing cell may be used when first introducing the student to a new symbol. It provides a concrete model of the relationship between the dots in a braille cell and the keys on a braillewriter.
- When you initially introduce the number 0, explain that it means no objects.
- Sorting trays often define the workspace as well as assist students in determining which flashcards have already been read. If you do not have sorting trays, you can use cafeteria type trays, cookie sheets, small cake pans, and/or small storage boxes.
- Using small storage boxes with labels can make it easier for a child to independently locate stored items such as unit blocks, flashcards, etc.
- Use a nonslip surface such as rubber shelf liner so braille pages and flashcards will not move as much.
- If you are using hard copy braille, the student can also do the following:
 - Stomp a foot
 - Underline or circle the number with a grease marker or crayon
 - Place a small sticker on top of the number
- Using the braillewriter for most of the writing activities is encouraged as it facilitates the development of motor memory.
- If needed, remind the student to move their fingers across the braille and check their work during writing activities.
- It is very important to use the correct finger on each key when learning new Nemeth symbols. This will help the student become accurate in their writing.
- If your student is using a refreshable braille display, explain about the additional keys on the far right and far left.
- When teaching the child how to tactually discriminate 2-dimensional shapes, use a variety of sizes for the shapes. The child will also need to explore shapes in different orientations.

Planning of Lessons

- It is recommended that each module be completed across multiple sessions.
- Provide frequent breaks and keep lessons short.
- As needed, supplement with other materials.
- You may use alternative materials as needed. For example, if you do not have an APH Grid Board, you can use 1-inch graph paper to create a Grid Board. Another option is to use graphic art tape and braille paper to create a Grid Board.
- If you elect to emboss the braille materials, you will notice that the pages are numbered. You are welcome to bind the pages with a comb-binder if you would like.
- Most modules include activities for enrichment and/or additional practice.
- Use half sheets of braille paper when using the braillewriter with young students. These sheets will be easier for the student to handle.