

Pre-Kindergarten Nemeth Braille Code Curriculum
Module 3: Nemeth Numerals 4-5
Teacher Reference Materials

Prerequisite skills:

- Ability to use rote counting number words in order
- Ability to verbally count objects
- Ability to tactually identify the numeric indicator and the numerals 1-3
- Ability to write the numerals 1-3

Math symbols and concepts, including braille knowledge, addressed:

- Counting
- Numeric indicator
- Numerals 1-5
- Concepts of "before" and "after"

Objectives:

The student will be able to:

- 1) Tactually identify the numerals from 1-5
- 2) Use the Accessible Equation Editor and/or braillewriter to write the numerals 1-5
- 3) Represent a number ranging from 1-5 by producing a set of objects with concrete materials and Nemeth Braille Code numerals
- 4) Use concrete materials (for "before" relating to one less and "after" relating to one more) and/or number cards in order and then determine what number comes before or after a specific number from 1-5 in Nemeth Code only

Other ECC skills addressed:

Listening skills; following directions; tactual discrimination; left-to-right tracking; taking turns; hand positioning; light touch (as opposed to scrubbing)

Teaching tips:

- This module should be completed across multiple sessions.
- Note that the beginning tracking activities are emphasizing the shape of the numeral.
- 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.

- As previously mentioned, the swing cell from the American Printing House for the Blind provides a concrete model of the relationship between the dots in a full braille cell and the keys on a braillewriter.
- 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!

Materials/technology needed:

- Accessible Equation Editor and/or braillewriter
- Braille paper
- 2 swing cells and pegs
- Index cards
- Unifix cubes (or other cubes that can be snapped together)
- Brightly colored construction paper
- Bin or bucket
- Glue stick
- Textured paper/material/small objects that remind student of a train
- Make a cube labeled with Nemeth numerals 2, 3, 4, 4, 5, 5 on the 6 faces using the Nemeth Feel 'n Peel stickers
- Outline/pattern of train cars from Texas State Library
https://www.tsl.texas.gov/ld/projects/trc/2008/manual/bil_trains.html#_Color_Train

Optional materials for follow-up activities or adaptation of activities:

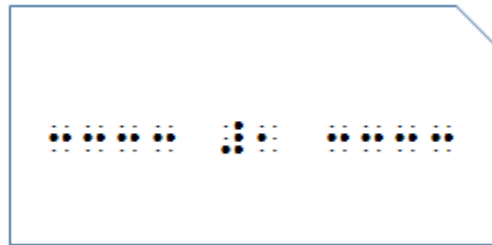
- Teddy bear manipulatives or other small objects that can be counted
- Fruit cut up into various shapes
- Two ½ dozen muffin tins and 12 small balls
- Scented stickers, Wikki sticks, buttons, or textured paper

Explanation of activities embedded into module:

- 1) If you do not have two swing cells, use two ½ dozen muffin tins with tennis balls for an easy way for the child to “build” the Nemeth numerals. Another variation would be to use a ½ dozen egg crate or a dozen egg crate cut in half with plastic eggs or golf balls that include different textures.
- 2) Create a tactual numeral page that can be displayed or taken home. The student will need a sheet of braille paper or brightly colored construction paper, a braillewriter, and four objects that remind him/her of a train! The student will write 4 in Nemeth. Then, the

student will glue four objects onto the paper! The same process will also be completed for the numeral 5 later in the module.

- 3) Create flash cards with the index cards. Cut out the upper right corner for easy identification of orientation. Make five flash cards for each numeral. Use lines of dots 2-5 for leading in and away from the numeral. See the next page for an example.



The flash cards will be used for practice of reading numerals at first. They will also be used to put the numbers in order in this and later modules. Give the student one number card at a time. Make sure that it is oriented with the cut out corner at the upper right.

- 4) The student rolls a homemade cube with Nemeth numerals and then reads the numeral. Afterwards he/she builds a train using that number of Unifix cubes or other cubes that can be snapped together. Afterwards, if desired, the student can practice writing the numeral using the Accessible Equation Editor and/or a braillewriter.

If you do not have Unifix cubes, you can also use MegaBlocks, Legos, or teddy bear manipulatives designed for preschoolers. If you do not want to make a cube with Nemeth numerals, use flash cards. The student can draw a card, read the numeral, and then build a train using that number of Unifix cubes.

This activity can easily be completed with the student and one of his/her friends (or you if no other students are present). The students should take turns rolling the die and building a train!

- 5) Make a number train, beginning with 1-5. Use brightly colored construction paper or braille paper to make several railroad cars.

Write the numerals 1-5 on small pieces of braille paper or index cards. Then have the student locate the numeral 1 and paste it onto a car. Repeat the process for the numerals 2, 3, 4, and 5. Then have the student arrange the railroad cars in order. The student may also enjoy “decorating” the railroad cars with scented stickers, Wikki sticks,

buttons, or textured paper/material. Feel 'n Peel Sheets: Carousel of Textures (catalog number 1-08863-00) from American Printing House for the Blind has a variety of adhesive backed and non-adhesive backed textured paper.

It may help to place the railroad cars on a nonslip surface such as rubber shelf liner so they will not move as much. You may also use a strip of sticky back Velcro on the back side of each railroad car and then arrange the railroad cars on a long strip of Velcro on the student's desk. You can also paste the railroad cars in place on a large piece of construction paper when they are correctly laid out.

Encourage verbalization of the names of the ordinal positions such as first and second while the children work. Use this activity to reinforce counting as well. Keep the railroad cars and in a later module the student will have the opportunity to build the number train to 10.

Materials Commercially Available:

American Printing House for the Blind (www.aph.org) sells the swing cell. The catalog number is 6-78041-00.

Additional materials that could be used from the American Printing House for the Blind (www.aph.org) include

- Feel 'n Peel Sheets: Carousel of Textures (1-08863-00)
- Hundreds boards and Manipulatives Kit (1-03105-00)
- FOCUS in Mathematics Kit, Second Edition (with print Teacher's Guide 1-08280-01, with braille Teacher's Guide 1-08281-01)
- Small Work-Play Tray with Dividers (1-03751-00, 1-03770-00) *also available within the FOCUS in Mathematics Kit*
- Textured sorting Circles and Shapes (1-08834-00)
- MathBuilders Unit 1: Matching, Sorting, and Patterning (with print Teacher's Guide 7-03560-00, with braille Teacher's Guide 5-03560-00)
- *Picture Maker Wheatley Tactile Diagramming Kit (1-08838-00) *Many of these objects and a blue felt board are available in the MathBuilders Unit 1 and the FOCUS in Mathematics Kits mentioned above.*
- *Feel 'n Peel Stickers: Nemeth Braille-Print Numbers 0-100 (1-08876-00) and Feel 'n Peel Point Symbols or Stars (1-08846-00; 1-08868-00; 1-08867-00)

** WARNING: CHOKING HAZARD -- Small Parts. Not intended for children ages 5 and under without adult supervision.*

Fun Facts from:

2012 DK Eyewitness Book entitled *Transportation* by Leon Gray and Ian Graham.