

Kindergarten Nemeth Braille Code Curriculum
Module 4: Building Towards the Hundreds Chart
Teacher Reference Materials

Prerequisite skills:

- Ability to use rote counting number words in order to 20
- Ability to tactually identify the numbers 1-20
- Ability to tactually identify the general omission symbol
- Ability to write the numbers 1-20
- Ability to read the numbering of math problems from 1-20, including the punctuation indicator and period

Math symbols and concepts, including braille knowledge, addressed:

- Count aloud to 50 beginning with 1
- Count aloud to 50 beginning with different numbers
- Skip count by 10s beginning with 10
- Skip count by 10s beginning with different numbers
- Numbers 21-50
- Numerical order
- "One more" and "one less"

Objectives:

The student will be able to:

- 1) Count aloud to 50 beginning with 1
- 2) Count aloud to 50 beginning with different numbers
- 3) Using a braille chart, skip count by 10s to 50, beginning with 10
- 4) Using a braille chart, skip count by 10s through the last row in the chart, beginning with different numbers
- 5) Tactually identify and read the numbers from 21-50
- 6) Place numbers 1-50 in order on a grid board
- 7) Locate numbers 1-50 on a braille chart
- 8) Identify a number that is "one more" or "one less" than a given number, ranging from 1-50

Other ECC skills addressed:

Listening skills; concept development; following directions; organization; tactual discrimination; left-to-right tracking; scan and interpret tactile graphics used in math; hand positioning; light touch (as opposed to scrubbing); recreation and leisure

Teaching tips:

- This module should be completed across multiple sessions.
- If the student stops counting before reaching 50, practice counting. There are multiple counting songs available online if you would like to incorporate music into the review of counting. Please note that by the end of kindergarten, a student should be able to count aloud to 100.
- If you do not have a Grid Board from the American Printing House for the Blind, 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 preferred, you can use flash cards, Velcro, and a large piece of construction paper to create a braille chart.
- If a student reads the numbers 21-50 incorrectly, tell the student the correct way to read the number.
- Sorting trays often define the work space. 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 number cards, etc.
- It may also help to place the number cards and hard copy braille on a nonslip surface such as rubber shelf liner so they will not move as the student is reading.
- If you are using hard copy braille, the student may also underline or circle the answer with a grease marker or crayon. Placing a small sticker on top of the answer is another option.
- Using the brailewriter for some of the writing activities is encouraged as it facilitates the development of motor memory.

Materials/technology needed:

- Accessible Equation Editor and/or brailewriter
- Braille paper
- Index cards
- Work and/or sorting trays
- Grid board (either the Grid Board from the APH Hundreds Board and Manipulatives Kit or one that you create)
- Number cards from 1-50 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)

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

- 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)
- Small stickers
- Timer
- Small storage boxes

Explanation of activities embedded into module:

- 1) In some of the activities, the student will use a Grid Board to create a number chart. If you do not have a Grid Board and Numbers Set from the American Printing House for the Blind, you can use 1-inch graph paper to create a Grid Board. You can use a braillewriter and 1-inch pieces of index cards to create the number cards. Another option is to use the Feel 'n Peel Stickers: Nemeth Braille-Print Numbers from the American Printing House for the Blind to create the number cards.

If preferred, you can use graphic art tape and braille paper to create a Grid Board. Another option is to use flash cards, Velcro, and a large piece of construction paper to create the charts.

Before beginning the activity each time, ensure that all numbers except the ones specifically listed in the activity have been removed from the Grid Board. When the student is creating a number chart to 10, you will place 4 and 10 onto the Grid Board. Similarly, when the student is creating a number chart to 20, you will place 3, 9, 12, and 17 onto the Grid Board. Likewise, when the student is creating a number chart to 30, you will place 4, 7, 11, 16, 23, and 28 onto the Grid Board. When the student creates a number chart to 50 toward the end of the module, you will place 6, 15, 22, 29, 34, 37, 41, and 45 onto the Grid Board.

Have the student begin the activity each time by locating the numbers on the chart and reading them. Then build the chart together with the student. At first, model placing a few of the numbers and explaining how you know where the numbers fit. Then encourage the student to place some of the numbers and explain how he/she knows where the numbers fit. Once you have completed building the chart together, have the student touch each number and read it. This process can

easily be completed multiple times if the student requires additional practice.

If needed, provide a hard copy of numbers in order or the APH Number Board to use as a model. You may also use APH Consumable Hundreds Chart. It may also help to place the numbers on a nonslip surface such as a rubber shelf liner or a work tray so they will not move as much.

Afterwards, have the student help you remove the numbers and then build the chart by himself/herself. It may be helpful to take notes about how quickly the student can place numbers and how well he/she can explain how he/she knows where the numbers fit.

- 2) In one of the activities, the student will listen carefully and then use his/her number chart to answer the math problem about "One More" or "One Less" that he/she hears. These activities can be completed using the Accessible Equation Editor and/or a braillewriter and braille paper.

Before beginning the activity, review or teach the meaning of the phrases "One More" and "One Less". Remind the student to listen carefully as you read each problem and to include a space after the period when numbering each problem. Also remind the student to press his/her line spacing key twice to move to the next line before numbering the problem each time.

Repeat saying each problem if needed. Also remind the student to move his/her fingers across the braille and check his/her work. An answer key in braille is provided in the document entitled "B3 Module 4_Answer Key for Writing Activities_K".

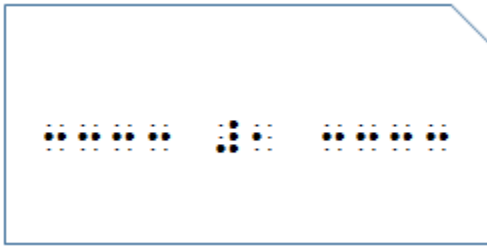
- 3) In a similar activity, the student will use his/her number chart to verbally identify the missing number that the general omission symbol is representing in problems about "One More" or "One Less". Instead of listening to the problems, the student will read the problems in braille.
- 4) One of the activities is called "Guess My Special Number". The only thing the student will need is his/her number chart to complete this activity. Tell the student to listen carefully to the clues so that he/she can guess the special number. Ask the student if he/she knows what a

clue is. Explain that it is information that gives him/her a hint about a special number.

In the second part of the module, the special numbers are limited to 1-20, and clues are initially limited to the concepts of row, one more, and one less. Toward the end of the module, the special numbers are expanded to 1-50.

After you give a series of clues about several special numbers, have the student give you clues so that you can figure out his/her special number. Offer assistance if the student has difficulty developing clues about his/her special number. If desired, the student can develop clues for additional special numbers.

- 5) Create flash cards for the numbers 21-50 with the index cards. Cut out the upper right corner for easy identification of orientation. Make two flash cards for each number. Use lines of dots 2-5 for leading in and away from the number. See below for an example of a flash card.



The flash cards will be used to practice reading numbers 21-30 at first. Give the student one number card at a time. Make sure that it is oriented with the cut out corner at the upper right. Later in the module the flash cards will be used to practice reading numbers from 31-50.

- 6) Materials for the follow-up activity include the Grid Board and Number Set. Begin by having the student use the Grid Board to create a chart to 50. If needed, provide a hard copy of numbers in order or the APH Number Board to use as a model. You may also use APH Consumable Hundreds Chart. It may also help to place the numbers on a nonslip surface such as a rubber shelf liner or a work tray so they will not move as much.

Model a multi-step process to locate a number on the Grid Board initially. Begin by having the student place his/her hands on top of your hands as you find the number 6. Then tell the student that you are moving down two rows. Then read the number that is down two rows. The number is 26.

Work to find the next number together. Begin by having the student find the number 50. Then ask him/her to move up three rows. Assist him/her to move up three rows if needed. Then ask him/her to move four to the left. Assist him/her to move four to the left if needed. Then ask, "What is my number?" The number is 16.

It will be important to pause at the end of each sentence to allow the student time to complete each step in the process. If the student seems to struggle, continue to model the process and/or create additional 2-step directions to different numbers.

Once the student is able to complete 2-step directions to locate numbers, have the student find several numbers by him/herself using multi-step directions. Here are the directions to give to the student:

Begin by finding number 25. Move up one row. Now move to the right three numbers. Next move down three rows. What number are you on?

Excellent work with the 50s chart! My special number was 48.

Let's see if you can follow the directions to another special number.

Begin by finding number 38. Move up two rows. Now move to the left one number. Next move down one row. Finally move to the right two numbers. What is my special number?

You got it! My special number is 29.

Follow the directions to find my last special number.

Begin by finding number 43. Move up four rows. Now move to the left two numbers. Next move down two rows. Finally move to the right five numbers. What is my special number?

You got it! My special number is 26. Now it is your turn to give me directions to a special number!

Offer assistance if the student has difficulty developing directions to his/her number. If desired, the student can develop directions for additional numbers.

The follow-up activity can easily be completed with peers as long as each student has a chart to 50.

Materials Commercially Available:

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

- Hundreds Boards and Manipulatives Kit (1-03105-00)
- Consumable Hundreds Chart (5-82710-00)
- FOCUS in Mathematics Kit, Second Edition that includes base ten blocks (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*
- *Feel 'n Peel Stickers: Nemeth Braille-Print Numbers 0-100 (1-08876-00)
- *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:

Fact Monster

<http://www.factmonster.com/spot/scooter1.html>

KidzSearch: Scooter Facts for Kids

<http://wiki.kidzsearch.com/wiki/Scooter>