

Kindergarten Module 5

Introduction to Addition and the Braille

Hundreds Chart

Teacher Guide

Prerequisite Skills

- Ability to use rote counting number words in order to 50
- Ability to tactually identify the numbers 1-50
- Ability to tactually identify the general omission symbol and mathematical comma
- Ability to write the numbers 1-20
- Ability to write the general omission symbol and mathematical comma
- Ability to read and write the numbering of math problems from 1-20, including the punctuation indicator and period

Symbols and Concepts

- Decompose numbers less than or equal to 5 (and then 10)
- Add within 5 (and then 10)
- Plus sign
- Equals sign
- Equations in a horizontal format
- Count aloud to 100 beginning with 1
- Count aloud to 100 beginning with different numbers
- Skip count by 10s beginning with 10
- Skip count by 10s beginning with different numbers
- Numbers 51-100
- Numerical order
- "One more" and "one less"

Objectives

The student will be able to:

- Represent addition to 5 with objects (and then 10), 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

- Tactually identify the plus sign
- Tactually identify the equals sign
- Tactually read equations in a horizontal format
- Tactually read numbered problems
- Fluently add within 5, including with equations in a horizontal format
- Use the braillewriter to write the plus sign
- Use the braillewriter to write the equals sign
- Use the braillewriter to write equations in a horizontal format
- Number problems correctly
- Count aloud to 100 beginning with 1
- Count aloud to 100 beginning with different numbers
- Using a braille hundreds chart, skip count by 10s to 100, beginning with 10
- Using a braille hundreds chart, skip count by 10s through the last row in the chart, beginning with different numbers
- Tactually identify and read the numbers from 51-100
- Place numbers 1-100 in order on a grid board
- Locate numbers 1-100 on a braille chart
- Identify a number that is "one more" or "one less" than a given number, ranging from 1-100

Other ECC Skills Addressed

Note: ECC stands for Expanded Core Curriculum.

- 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

Required Materials

- Braillewriter
- Braille paper
- Counting bears and/or pennies in a bowl

- Braille documents available within the curriculum
 - Student braille document
 - Five frame
 - Ten frame
 - Ten frame activity document
- Work and/or sorting trays
- Timer
- Index cards
- Grid board (either the Grid Board from the Hundreds Board and Manipulatives Kit from American Printing House for the Blind [APH] 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)

Optional Materials

- Assorted objects, Unifix cubes, or base ten unit blocks
- Magnetic counters on a cookie sheet or magnetic board
- Nonslip surface such as rubber shelf liner
- Writing answers braille document
- Grease marker or crayon to circle or underline answers
- 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
- APH Tactile Five and Ten Frames
- APH Tactile Tokens
- Small pieces of Wikki Stix®
- Small stickers
- Textured paper
- Small storage boxes

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.
- This module should be completed across multiple sessions.
- If the child is using a refreshable braille display, ensure that the child knows how to move to the next line of braille. Offer assistance as needed.
- If a student reads the Nemeth symbols or equation incorrectly, tell the student the correct way to read the symbol or equation.
- If the student stops counting before reaching 100, 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 APH, 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 flashcards, Velcro, and a large piece of construction paper to create a braille chart.
- Sorting trays often define the workspace. 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 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 some of the writing activities is encouraged as it facilitates the development of motor memory.
- 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.
- We maintain a list of [commercially available materials](#) that can be used to supplement instruction.

Activities

Activity 1

- Create an addition story within 5. The student will need a braillewriter, braille paper, a variety of small objects, and a glue stick. You may also use sticky-back strips of Velcro and sticky-back circles of Velcro to attach the items to the braille paper. If preferred, you can glue the braille paper to cardboard or poster board.
- Begin by telling the student that you will be working together to create an addition story. Ask the student to select a topic to write about. Offer suggestions as needed. Then collect objects to illustrate the story that can be easily counted like one smooth button, two birthday candles, or three keys. Afterwards, work with the student to create an addition story that incorporates the objects. Encourage the child to braille as much of the story as possible. The last step will be to attach the objects to the braille paper.
- It may help to place the braille paper on a nonslip surface such as rubber shelf liner so it will not move as the student is attaching the items and reading the story. It may also help to use bowls or a sorting tray to keep the assortment of small objects organized. If you are using Velcro, you may want to glue an envelope or Ziploc bag to the back of the braille paper to hold the items inside.
- Velcro is recommended so that the student can take the objects on and off of the braille paper when acting out the situation. If preferred, you can use hot glue instead of Velcro to attach the objects.

Activity 2

- This activity is a game called "Zoom to 5" with a five frame and pennies. The student will need a sorting tray and 2 flashcards for each number from 0-5. Similar to the other activities in the module, you may also place the five frame on a cookie sheet or magnetic board and use magnetic counters instead of pennies.
- Shuffle the flashcards and then have the student draw a flashcard. They will read the number on the flashcard and then use the five frame and pennies to tell you how many more are needed to make 5.
- As the child reads each number card, have them use a sorting tray to separate which cards they have read and which cards they have not read.
- If needed, remind the student that no additional pennies would be needed to make 5 when they select a flashcard with the number 5 on it.

- The student wins the game if they can tell you how many more are needed to make 5 for all of the numbers before the timer goes off. The length of time for the game should be based on the individual needs of the student. If desired, this game can be played more than once. The length of time can be decreased each time in order to promote fluency.

Activity 3

- The student will listen carefully and then write the braille symbols that they hear. This activity can be completed using the braillewriter and braille paper.
- Remind the student to check their work. An answer key has been provided for this activity in the braille document entitled "GK-M5-Writing-Answers.brf".
- If your student is using a refreshable braille display for this activity, explain about the additional keys on the far right and far left.

Activity 4

Activity 4 is similar to Activity 3, but with a focus on numbering problems and writing a series of numbers with a mathematical comma.

Activity 5

Activity 5 is similar to Activity 3, but with a focus on writing equations.

Activity 6

- Create flashcards with the following equations using the index cards: 1 plus 1 equals what number, 2 plus 0 equals what number, 1 plus 2 equals what number, 0 plus 5 equals what number, 4 plus 1 equals what number, 2 plus 3 equals what number, 1 plus 0 equals what number, 1 plus 3 equals what number, 4 plus 0 equals what number, 5 plus 0 equals what number, 0 plus 0 equals what number, 3 plus 2 equals what number, and 2 plus 1 equals what number.

$$1+1 = ?$$

$$2+0 = ?$$

$$1+2 = ?$$

$$0+5 = ?$$

$$4+1 = ?$$

$$2+3 = ?$$

$$1+0 = ?$$

$$1+3 = ?$$

$$4+0 = ?$$

$$5+0 = ?$$

$$0+0 = ?$$

$$3+2 = ?$$

$$2+1 = ?$$

- Cut out the upper right corner of each flashcard for easy identification of orientation. Begin by shuffling the flashcards, and then have the student select a card. As the child reads each equation, have them use a sorting tray to separate which cards they have read and which cards they have not read.
- Afterwards, have them tell you what number the general omission symbol stands for. If needed, the student can use manipulatives in order to determine what number the general omission symbol stands for. Once they can read all of the equations correctly, have them go back and time how quickly they can read the equations.

Activity 7

Activity 7 is similar to Activity 3, but with a focus on writing addition problems containing a general omission symbol.

Activity 8

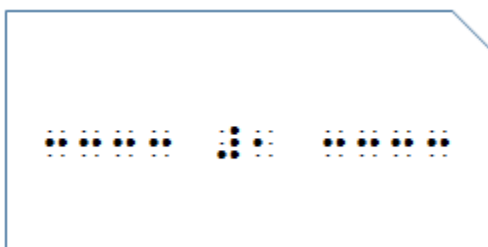
Activity 8 is similar to Activity 3, but with a focus on writing addition problems that do not contain a general omission symbol.

Activity 9

Activity 9 is similar to Activity 2, but the numbers will range from 0-10. The student will play "Zoom to Ten" with a ten frame, sorting tray, pennies, and 2 flashcards for each number from 0-10.

Activity 10

- Create flashcards for the numbers 51-100 with the index cards. Cut out the upper right corner for easy identification of orientation. Make five flashcards for each number. Use lines of dots 2-5 before and after the number. For example, for numeral 1, type dots 2-5, dots 2-5, dots 2-5, dots 2-5, space, dots 3-4-5-6, dot 2, space, dots 2-5, dots 2-5, dots 2-5, dots 2-5.



- The flashcards will be used to practice reading numbers 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.

Activity 11

All information is provided in the teacher script.

Activity 12

- The student will listen carefully and then use their number chart to answer the math problem about "One More" or "One Less" that they hear. This activity can be completed using the 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 their 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 their fingers across the braille and check their work. An answer key in braille is provided in the braille document entitled "GK-M5-Writing-Answers.brf".

Activity 13

- This activity is called "Guess My Special Number". The only thing the student will need is their hundreds chart to complete this activity. Tell the student to listen carefully to the clues so that they can guess the special number. Ask the student if they know what a clue is. Explain that it is information that gives them a hint about a special number.
- After you give a series of clues about several special numbers, have the student give you clues so that you can figure out their special number. Offer assistance if the student has difficulty developing clues about their special number. If desired, the student can develop clues for additional special numbers.

Activity 14

- Materials for the activity include the Grid Board and Number Set. Begin by having the student use the Grid Board to create a chart to 100. If needed, provide a hard copy of numbers in order or the APH Number Board to use as a model. You may also use an APH Consumable Hundreds Chart. It may 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 their hands on top of your hands as you find the number 63. Then move your hands down two rows. Then ask, "What is my number?" The number is 83.
- Work to find the next number together. Begin by having the student find the number 40. Then ask them to move up three rows. Assist them to move up three rows if needed. Then ask them to move three to the right. Assist them to move three to the right if needed. Then ask, "What is my number?" The number is 13.
- 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 themselves using multi-step directions. Here are the directions to give to the student:
 - Begin by finding number 73. Move up one row. Now move to the left two numbers. Next move down two rows. What number are you on?
 - Excellent work with the 100s chart. My special number was 81.
 - Let's see if you can follow the directions to another special number.
 - Begin by finding number 38. Move up three rows. Now move to the right one number. Next move down five rows. Finally move to the left two numbers. What is my special number?
 - You got it. My special number is 57.
 - Follow the directions to find my last special number.
 - Begin by finding number 88. Move up four rows. Now move to the left two numbers. Next move down two rows. What is my special number?
 - You got it. My special number is 66. Now it is your turn to give me directions to a special number.

- Offer assistance if the student has difficulty developing directions to their number. If desired, the student can develop directions for additional numbers.
- The activity can easily be completed with peers as long as each student has a chart to 100.

Fun Facts

Hartman, H. (2017, February 21). *Scooter mania*. Fact monster. Retrieved

June 4, 2020, from <http://www.factmonster.com/spot/scooter1.html>

Scooter. (n.d.). KidzSearch. Retrieved June 4, 2020, from

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