

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

On your mark, get set, go! It's time for an adventure on a scooter! Do you know what an adventure is? An adventure is a fun experience, and building toward the braille hundreds chart is lots of fun!

For the first part of our adventure, let's practice counting aloud, beginning with 1 and ending with 10. Count along with me!

1 2 3 4 5 6 7 8 9 10

Note: *There are multiple counting songs available online if you would like to incorporate music into the review of counting from 1-10.*

That was super counting! Now let's use our Grid Board from the APH Hundreds Board and Manipulatives Kit to build a chart together, beginning with the numbers from 1 to 10. Use your hands to explore the Grid Board. What did you notice about the board?

Note: *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 10s chart.*

Yes, the Grid Board is large and contains 10 rows. You are also correct that there are no numbers on the board yet!

Place your hands on the top row of the grid. A row goes from the left to the right. Move your hands across the row from left to right. Now count the squares on the top row. Yes, there are 10 squares on the first row. Now place your hands on the bottom row of the Grid Board. Move your hands across the bottom row from left to right. You got it!

The Grid Board also contains 10 columns. What, if anything, do you know about a column? A column goes from the top to the bottom. Place your hands on the column on the far left of the Grid Board. Move your hands down the column from top to bottom. Nice work! Now place your hands on the column on the far right of the Grid Board. Move your hands down the column from top to bottom. You got it!

Note: *Place the numbers 4 and 10 of the Numbers Set from the APH Hundreds Board and Manipulatives Kit onto the Grid Board in the location where they belong.*

Now I am going to place two numbers on the top row of the board. Scan the top row from left to right and find the two numbers. What numbers did you find?

Yes, the numbers are 4 and 10. Now, let's work together to place the rest of the numbers from 1 to 10 on the Grid Board.

Note: *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.*

Now place your hand on top of my hand and listen as I touch each number as I read it. Now, you try it!

Help me remove the numbers so that you can try to build the chart to 10 by yourself. Once you finish building your chart, find the number 1 and then read the numbers from 1 to 10. Way to go, Nemeth champion!

So, what happens when you move your fingers to the right on the chart? Do the numbers get bigger or smaller? You got it! The numbers get bigger. Each number is one more than the previous number. Put your fingers on 3. What is one more than 3? That's right! 4 is one more than 3.

Using the chart we just created, tell me what number is one more than 9. That's right! 10 is one more than 9. What is one more than 5? That is correct! 6 is one more than 5. Now give me an example about "one more".

Great work, math superstar! Now tell me what number is one more than 2. That's right! 3 is one more than 2. What number is one more than 6? You got it now! 7 is one more after 6.

So, what happens when you move your fingers to the left on the chart? Do the numbers get bigger or smaller? That's correct, math superstar! The numbers get smaller. Put your fingers on 3. What number is one less than 3? You got it! 2 is one less than 3. Now give me an example about "one less".

Using the chart, tell me what number is one less than 4. Way to go! 3 is one less than 4. Let's try another one. Tell me what number is one less than 9. That's right. 8 is one less than 9.

Fun fact: A scooter is similar to a bicycle except that most scooters do not have pedals or a bicycle chain. The wheels are also much smaller.

Activity time: You will need the Accessible Equation Editor and/or your braillewriter and braille paper for this activity. Listen as I read each math problem, and then use your chart to answer the question. You will number each problem, and then write your answer.

Note: 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".

1. What number is one less than 10?
2. What number is one more than 4?
3. What number is one less than 7?
4. What number is one more than 1?
5. What number is one less than 9?

Let's try a few more.

6. What number is one less than 3?
7. What number is one more than 6?
8. What number is one more than 2?
9. What number is one less than 8?
10. What number is one less than 5?

Note: There are multiple counting songs available online if you would like to incorporate music into the review of counting from 1-20. Ensure that all numbers except 3, 9, 12, and 17 have been removed from the Grid Board before beginning the second part of the adventure.

For the second part of our adventure, let's practice counting aloud, beginning with 1 and ending with 20. Count along with me!

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

That was excellent counting to 20! Now let's use our Grid Board again to build a chart together. This time we will be building to 20. Which two rows do you think we will use and why?

That's right! We will be using the top two rows, similar to how we built to 10. Now I am going to place four numbers on the top two rows of the board. Scan the top row from left to right and find the numbers.

What numbers did you find? Yes, the numbers are 3 and 9. Now find the two numbers on the second row. What numbers did you find? That's right. The numbers are 12 and 17.

Now let's work together to place the rest of the numbers from 1 to 20 on the Grid Board.

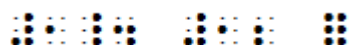
Nice work building to 20! Place your hand on top of my hands and listen as I touch each number as I read it. Now, you try it!

Help me remove the numbers so that you can try to build the chart to 20 by yourself. Once you finish building your chart, find the number 1 and then read the numbers from 1 to 20. Way to go, Nemeth champion!

Note: 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.

Fun fact: Some scooters have a motor, some scooters have pedals, and some scooters are pushed with a foot.

We can use our chart to answer questions about one more and one less. Begin by reading the problem about “one more”.



Did you remember that the full braille cell stands for a general omission symbol? What number is the general omission symbol standing for? You got it! 13 is one more than 12. Let's try another problem about "one more".



What number is the general omission symbol standing for? Excellent! 10 is one more than 9.

Now read the math problems below about “one more”. Then use your chart and tell me what number the general omission symbol stands for. Good luck!



Fun fact: Scooters that are powered by feet are sometimes called kick scooters.

Now let's try some math problems about "one less". Read the next problem and then use your chart to figure out what number the general omission symbol stands for.

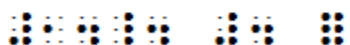
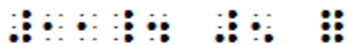


Super work, Nemeth superstar! The general omission symbol is standing for the number that is "one less" than 8. What number is that? That's right! 7 is "one less" than 8. Read the next problem.



Now use your chart to figure out what number the general omission symbol stands for. 18 is "one less" than 19.

Now read the math problems below about “one less. Then use your chart and tell me what number the general omission symbol stands for.



Activity time: This activity is called “Guess My Special Number”. The only thing you will need is your chart. Listen carefully to my clues so that you can guess my special number. Do you know what a clue is? It is information that gives you a hint about my special number.

Here we go! My special number is on the top row, and it is one more than 8. What is my special number?

That’s right! My special number is 9. Let’s try another. My special number is not on the top row, and it is one less than 15.

You got it! My special number is 14. Listen carefully because this time I will be sharing three clues about my number.

My special number is a two-digit number, and it is on the top line. It is one more than 9. Do you know what my special number is?

Excellent work, math detective! My special number is 10.

Now it is your turn to give me clues so that I can figure out your special number.

Note: Offer assistance if the student has difficulty developing clues about his/her special number. If desired, the student can develop clues for additional numbers.





Fun fact: Kick scooters can travel about 4 miles per hour.

How high can you count, math superstar? For the third part of our adventure, let’s practice counting again, but this time don’t stop at 20.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30

Note: If the student stops counting before reaching 30, it may be helpful to practice counting to 30 before moving to the next section. If the student continues counting beyond 30, that will be helpful in the next section. By the end of kindergarten, a student should be able to count aloud to 100.

That was great counting! Before we use the Grid Board to build a chart to 30, let’s practice reading numbers from 20 to 30 together.

   
20 21 22 23

24 25 26 27

28 29 30

That was excellent reading! Let's read the numbers from 20 to 30 together once more.

20 21 22 23

24 25 26 27

28 29 30

That was super reading, Nemeth all-star! Continue to the next lines of braille and read just the numbers from 20 to 30.

Figure 1 displays 20 small plots arranged in a 4x5 grid, illustrating various spatial patterns of points (dots) on a grid. The patterns represent different spatial processes, likely generated from a spatial point process model. The patterns vary in density, shape, and distribution, showing a range of spatial configurations from sparse to dense, and from regular to irregular.

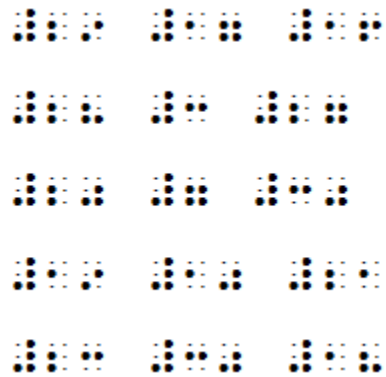
Note: If a student reads the numbers incorrectly, tell the student the correct way to read the number.

Fun fact: Some people who live in cities like New York City ride their kick scooter to work since riding a scooter is faster than walking.

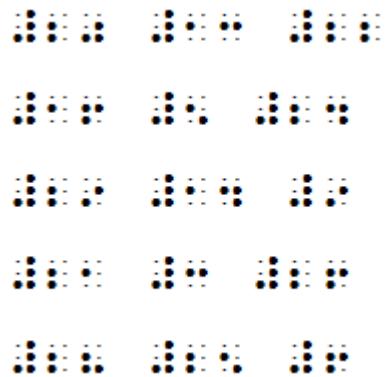
Activity time: Use your flash cards to practice reading the numbers 20-30. Once you can read all of the numbers correctly, go back and time how

quickly you can read the numbers! Do you think you can read the numbers even quicker? If so, try one more time! You can do it!

Let's practice reading numbers from 1-30. There will be 3 numbers on each line.



That was super reading! Let's try a few more.



Note: Ensure that all numbers except 4, 7, 11, 16, 23, and 28 have been removed from the Grid Board before continuing.

Now let's use our Grid Board again to build a chart together. This time we will be building to 30. We will be using the top three rows, similar to how we built charts to 10 and 20. Now I am going to place six numbers on the top three rows of the board. Scan the top row from left to right and find the numbers.

What numbers did you find? Yes, the numbers are 4 and 7. Now find the two numbers on the second row. What numbers did you find? That's right. The numbers are 11 and 16. What numbers did you find on the third row? Excellent work! The numbers are 23 and 28.

Now let's work together to place the rest of the numbers from 1 to 30 on the Grid Board. Afterwards read the numbers on the chart, beginning with 1. Way to go, Nemeth champion!

Help me remove the numbers from the Grid Board so that you can build the chart to 30 by yourself. Afterwards read the numbers on the chart, beginning with 1. Ready, set, go!

Note: *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.*

Fun fact: Kick scooters are light-weight and unlike bicycles, most of them do not have a seat to sit on or pedals. They also fold up which makes them easy to store when you are not using them. Have you ridden on a kick scooter?

Let's review what happens when you move your fingers to the right on the chart. Do the numbers get bigger or smaller? That's correct, math superstar! The numbers get bigger.

We can use our chart to help us begin counting with any number. For example, if we want to count beginning with 7, we would use our fingers to find 7 and what number is next to it on the chart. Find 7 on the chart. What number is next to it? That's right. 8 is next to 7. We are ready to count beginning with 7. Stop counting when you reach 30.

7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30

That was excellent counting! Now let's use our chart to count beginning with 11. What is the first step? That is correct. Begin by finding 11 on the chart. What is the next step? Find the number that is next to 11. You got it! 12 is next to 11.

We are ready to use the chart and count beginning with 11.

11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30

Activity time: Use your chart and count beginning with the following numbers. You can stop counting each time when you reach 30.



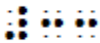
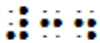



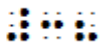


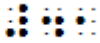
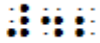


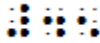
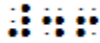


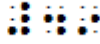
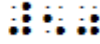
First, count beginning with 23. Second, count beginning with 17. Third, count beginning with 9. Fourth, count beginning with 26.

That was great counting! Let's practice counting again. For the fourth part of the adventure, let's count to 50.



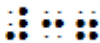
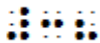


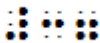
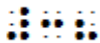
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
38 39 40 41 42 43 44 45 46 47 48 49 50

Note: *If the student stops counting before reaching 50, it may be helpful to practice counting to 50 before moving to the next section.*

Before we use the Grid Board to build a chart to 50, let's practice reading numbers from 31 to 50 together.

			
31	32	33	34
			
35	36	37	38
			
39	40	41	42
			
43	44	45	46
			
47	48	49	50

That was excellent reading! Let read the numbers from 31 to 50 together once more.

			
31	32	33	34
			
35	36	37	38

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39 40 41 42

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43 44 45 46

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47 48 49 50

That was super reading, Nemeth all-star! Continue to the next lines of braille and read just the numbers. All of the numbers will be from 31 to 40.

Note: If a student reads the numbers incorrectly, tell the student the correct way to read the number.

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Now read the number at the beginning of each line and then find its match on the line of braille. Say "go, scooter, go" when you find the match!

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Excellent matching, Nemeth super star! Let's try a few more! Remember to say "go, scooter, go" when you find the match!

111 222 333 444
 555 666 777 888
 999 1010 1111 1212
 1313 1414 1515 1616
 1717 1818 1919 2020

Let's practice reading numbers from 1-40. There will be 3 numbers on each line.

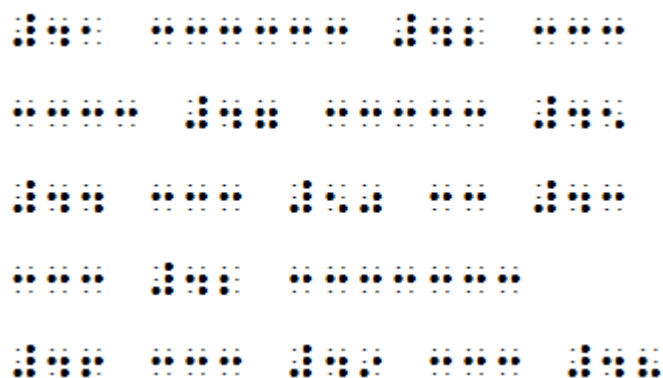
2121 2222 2323
 2424 2525 2626
 2727 2828 2929
 3030 3131 3232
 3333 3434 3535

That was super reading! Let's try a few more.

3636 3737 3838
 3939 4040 4141
 4242 4343 4444
 4545 4646 4747
 4848 4949 5050

Fun fact: Four years ago Naoya Nishinaga, now 23, traveled across Japan on his kick scooter. Afterwards, he traveled over 3,000 miles along the coast of Australia. He scooted about 43 miles each day.

Continue to the next line of braille and read just the numbers. All of the numbers will be from 41 to 50.



Activity time: Use your flash cards to practice reading the numbers 31-50. Once you can read all of the numbers correctly, go back and time how quickly you can read the numbers! Do you think you can read the numbers even quicker? If so, try one more time! You can do it!

Note: *Ensure that all numbers except 6, 15, 22, 29, 34, 37, 41, and 45 have been removed from the Grid Board before continuing.*

You are a Nemeth champion! Now let's use our Grid Board again to build a chart together. This time we will be building to 50. We will use the top five rows, similar to how we built charts to 10, 20, and 30. Now I am going to place eight numbers on the top five rows of the board. Scan the top row from left to right and find the number.

What number did you find? Yes, the number is 6. Now find the number on the second row. What number did you find? That's right. The number is 15. What two numbers did you find on the third row? Excellent work! The numbers on the third row are 22 and 29.

Now find the fourth row. What numbers did you find? That is correct! The numbers are 34 and 37. Now find the fifth row. What numbers did you find? That is correct. The numbers are 41 and 45. Now let's work together to place the rest of the numbers from 1 to 50 on the Grid Board.

Note: *This would be a good time to use a sorting tray. If necessary, model how to separate the number cards into groups. This will make it easier to build the chart to 50 on the Grid Board.*

Great work! Now read the numbers on the chart, beginning with 1. Way to go, Nemeth champion!

Help me remove 5 numbers from each row of the Grid Board so that you can build the chart to 50 by yourself. You get to choose which numbers you remove.

You did it! Way to go! Now remove all of the numbers and try to build the chart to 50 by yourself.

On your mark, get set, go! For the last part of our adventure, let's practice using our chart to 50 to help us solve problems about "one more" and "one less". Tell me what number is one more than 33. That's right! 34 is one more than 33. What number is one more than 46? You got it now! 47 is one more after 46.

Let's try a couple more. What number is one more than 28? That is correct! 29 is one more than 28. What number is one more than 41? You got it! 42 is one more than 41. Now give me an example about "one more".

Now let's try some problems about "one less". What number is one less than 22? You got it! 21 is one less than 22. What number is one less than 48? You got it! 47 is one less than 48.

Let's try another one. What number is one less than 35? You got it! 34 is one less than 35. Now give me an example about "one less".

Fun fact: Some scooters used in P.E. classes are low to the ground and include handles on the sides. They are designed so that you can sit on them and use both feet to push yourself.

Activity time: You will not need any new materials for this activity. Listen carefully as I read each problem, and then use your chart to answer the questions aloud.

Note: *Repeat saying each problem if needed. Also assist the student in locating the number on the chart as needed.*

1. What number is one less than 49?
2. What number is one more than 16?
3. What number is one less than 37?
4. What number is one more than 29?
5. What number is one less than 34?

Let's try a few more.

6. What number is one less than 31?
7. What number is one more than 40?
8. What number is one more than 42?
9. What number is one less than 28?
10. What number is one less than 44?

That was excellent work! Now let's practice skip counting by 10s to 50 together.

10 20 30 40 50

Now let's use our chart to 50 as we skip count by 10s.

Note: *Count by 10s, beginning with 10. Have the student move their hands to the next row and count to 10 with you each time.*

What pattern did you notice? Yes, all of the numbers for skip counting by 10s are in the same column. A column goes up and down.

What do you think will happen if I change the starting number to 5? Will the patterns for skip counting by 10s remain the same or will it change? Will all of the numbers be in the same column? How do you know?

Let's skip count by 10s beginning with 5, using our chart, and find out.

5 15 25 35 45

Note: *Count by 10s, beginning with 5. Have the student move their hands from left to right and count to 10 with you each time.*

Notice how all of the numbers for skip counting by 10s beginning with 5 are in the same column again. The last digit for all of the numbers is 5.

Way to go! Now let's skip count by 10s using our column pattern. Begin with 3 and go down the column on the chart.

3 13 23 33 43

Let's try one more! Skip count by 10s beginning with 8, using our chart.

8 18 28 38 48

Activity time: Let's play "Guess My Special Number" again. The only thing you will need is your chart. Listen carefully to my clues so that you can

guess my special number. Do you remember what a clue is? It is information that gives you a hint about my special number.

Here we go. My special number is not on the top row, and it is one more than 28. What is my number?

That's right! My special number is 29. Let's try another. My special number is ten more than 40.

You got it! My special number is 50. Listen carefully because this time I will be sharing two clues about my special number.

My number is a two-digit number. It is one more than 47. Do you know what my special number is?

Excellent work, math detective! My number is 48. Let's try one more. My special number is a two-digit number, and it is ten more than 15. What is my special number?

Way to go! My number is 25. Now it is your turn to give me clues so that I can figure out your special number.

Note: *Offer assistance if the student has difficulty developing clues about his/her special number. If desired, the student can develop clues for additional numbers.*

Now you are ready for the last train stop: module 4 check-up! Thank you for all of your hard work! You are a Nemeth all-star!

Follow-up activity:

Begin by using the Grid Board to create a chart to 50. Then see if you can follow the directions to my special number.

Note: *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.*

Let's practice together the first time.

Note: *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, model the process for the student.*

Begin by finding the number 6. Next move down two rows. What is my number?

That is right! My number is 26.

Let's try another one together.

Begin by finding the number 50. Move up three rows. Now move four to the left. What is my number?

Perfect! My number is 16.

Now you try one by yourself. Here are the directions:

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!

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