

# Pre-Kindergarten Nemeth Braille Code Curriculum

## Module 2: Nemeth Numerals 1-3

All aboard the Nemeth train! Do you remember what sound a train makes?  
That's right! Choo choo!

Let's explore the numeral 1 in Nemeth!

1



Numeral 1 begins with the numeric indicator in the first braille cell and ends with a dot 2 in the second braille cell! All Nemeth numerals are placed in the bottom part of the braille cell.

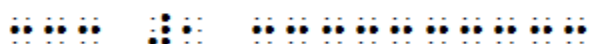
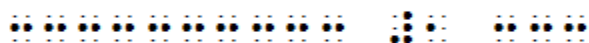
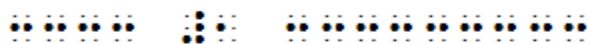
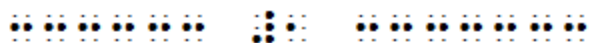
Now let's use the swing cell. It is your turn to build the numeral 1 with a swing cell. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Chug-chug-chug-chug!

Begin by using the pegs to make the numeric indicator in the first swing cell. Then move to the second swing cell and place a peg in dot 2. Congratulations! You made the numeral 1.

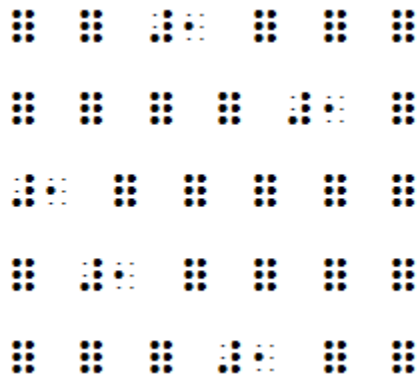
**Note:** *If you do not have two swing cells, use two muffin tins and balls to make the numeral 1!*

Now it is your turn to find the numeral 1 in each line of braille. Remember to keep your hands together and curve your fingers! Move your fingers lightly across the line of braille from left to right and make a sound like a train when you find the numeral 1!

**Note:** *If you are using a refreshable braille display, ensure that the child knows how to move to the next line of braille. Offer assistance as needed.*

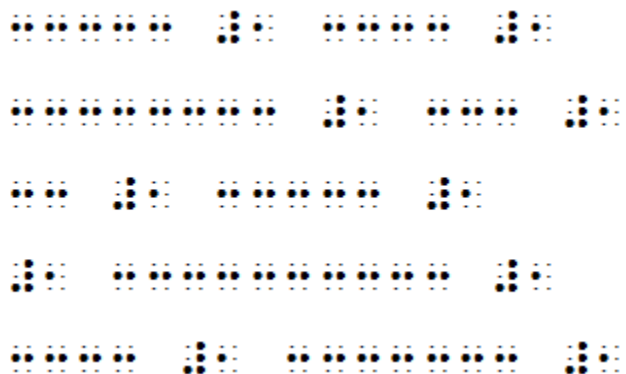


Clickety clack along the rails! You found the numeral 1. Now move your fingers across each line of braille and find the numeral 1 hidden in a line of railroad cars that are really full braille cells!

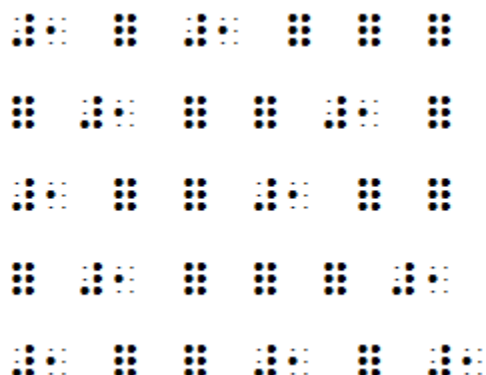


**Fun fact:** Some trains can go more than 300 miles per hour! That is faster than a race car and a police car!

Now there will be more than one numeral 1 on each line of braille. Move your fingers across the line of braille and make a sound like a train when you find each numeral 1!



Way to go! Let's keep going! Now move your fingers across the line of braille and find all of the numeral 1s hidden in a line of railroad cars. Make a sound like a train each time you find the numeral 1!



**Fun fact:** Trains can be powered by steam, diesel fuel, and electricity!

Now let's have fun with writing! Begin by opening the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator.

Review how to write the numeric indicator on the Accessible Equation Editor and/or your braillewriter. Use your ring finger on the left and all three fingers on the right!

**Note:** *If your student is using a refreshable braille display, explain about the additional keys on the far right and far left. If your student is using a QWERTY keyboard with the Accessible Equation Editor, it may be helpful to use tactile dots on the keys used for dot 1 and dot 4.*

Now let's finish the numeral 1. Let's open the second swing cell. The only peg is in dot 2. Use your middle finger on the left and none of the fingers on the right. You try it now in the air and then on the Accessible Equation Editor and/or your braillewriter.

Put the two braille cells together and practice writing the numeral 1 in Nemeth using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals.

When you finish writing the numeral 1 several times, move your fingers across the braille and check your work!

**Activity time:** You will need a sheet of braille paper, your braillewriter, and one object that reminds you of a train!

Ready, set, go! Write the numeral 1 in Nemeth. Then, glue your one train onto the paper!

Way to go! Let's move to the numeral 2 in Nemeth!

2



Number 2 begins with the numeric indicator in the first braille cell and ends with dots 2-3 in the second braille cell!

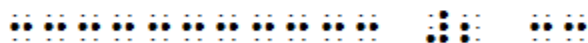
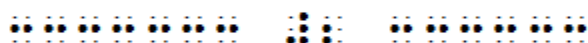
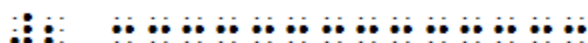
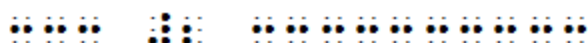
Let's use the swing cells again. It is your turn to build the numeral 2. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Choo-choo-choo-choo!

Begin by using the pegs to make the numeric indicator in the first braille cell. Then move to the second braille cell and place two pegs in dots 2-3.

**Note:** *If you do not have a swing cell, use two muffin tins and tennis balls to make the numeral 2!*

Now it is your turn to find the numeral 2. Softly move your curved fingers across each line of braille and say "all aboard" whenever you find the numeral 2!

**Note:** *If you are using hard copy braille, the student can underline or circle the numeral 2 instead of saying "all aboard". If you would prefer, the student could also place a small sticker on top of each numeral 2.*



Clickety, clickety, clickety, clack along the rails! You found the numeral 2.  
Now move your fingers across each line of braille and find the numeral 2  
hidden in a line of railroad cars.

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Sometimes a line may have more than one numeral 2. Move your fingers  
across the next line of braille and find both numeral 2s.

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You are on the right track! Way to go! Continue to the next line of braille  
and good luck finding all of the numeral 2s.

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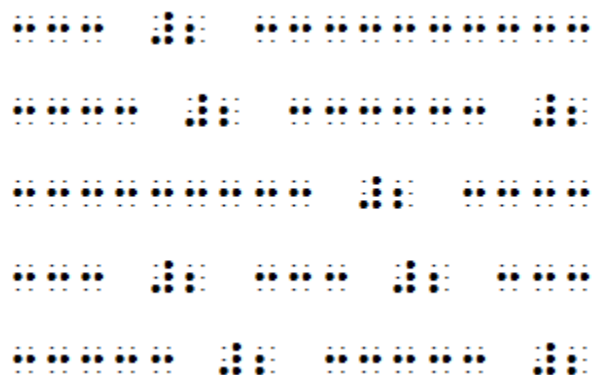
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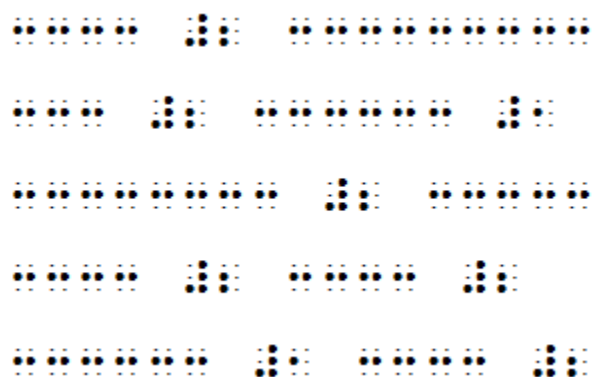
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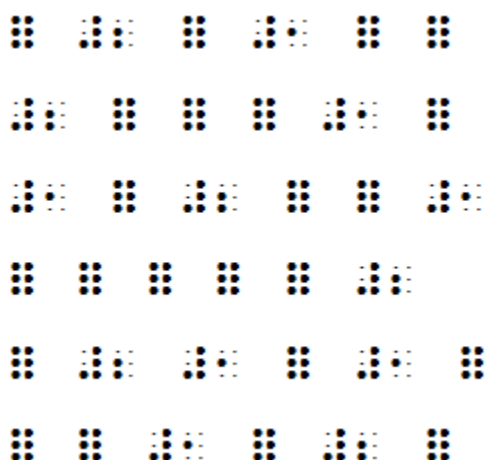
You are a math super star! Let's find the numeral 2 again! This time say "ding ding ding" like the signal at a railroad crossing when you find the numeral 2! On some lines you may find lots of numeral 2s.



Let's find more numeral 2s. Say "choo choo" when you find the numeral 2 in each line. Be careful to make sure it is a numeral 2 and not a numeral 1.



All aboard, math superstar! Let's find some more numeral 2s that are hiding in a line of railroad cars and numeral 1s. Just find the 2s.



Let's practice reading numerals 1 and 2. Read the numeral at the beginning of each line and find its match on the line of braille.

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Way to go, Nemeth superstar! Let's try some more.

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**Activity time:** Use your flash cards to practice reading the numerals 1 and 2. Place all of the numeral 1s in one stack and place all of the numeral 2s in another stack.

**Note:** *This would be a good time to use the sorting trays.*

**Fun fact:** Trains are built to transport people or cargo along rail tracks.

Now let's have fun with writing! Go back to the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator. Since it is closed, open the swing cell.

Use your ring finger on the left and all three fingers on the right to write the numeric indicator on the Accessible Equation Editor and/or your braillewriter.

Now let's finish the numeral 2. Open the second swing cell. The pegs are in dots 2-3. Use your middle and ring fingers on the left and none of the fingers on the right. You try it now in the air and then on the Accessible Equation Editor and/or your braillewriter.

Put the two cells together and practice writing the numeral 2 in Nemeth using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals.

When you finish writing the numeral 2 several times, move your fingers across the braille and check your work!

**Activity time:** You will need a sheet of braille paper, your braillewriter, and two objects that remind you of a train!

Ready, set, go! Write the numeral 2 in Nemeth. Then, glue your two trains onto the paper!

**Fun fact:** Trains were first created more than 200 years ago!

Next stop is the numeral 3 in Nemeth.

3



Numeral 3 begins with the numeric indicator in the first braille cell and ends with dots 2-5 in the second braille cell! All Nemeth numerals are placed in the bottom part of the braille cell.

Now let's use the swing cells to build the numeral 3. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator! Ding-ding-ding-ding!

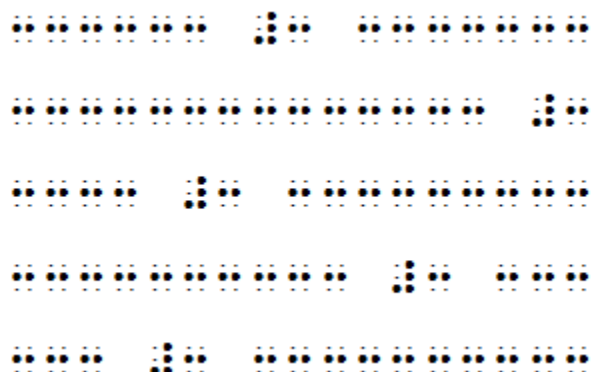
Begin by using the pegs to make the numeric indicator in the first braille cell. Then move to the second braille cell and place pegs in dots 2-5. Congratulations! You made the numeral 3.

**Note:** *If you do not have two swing cells, use two muffin tins and balls to make the numeral 3!*

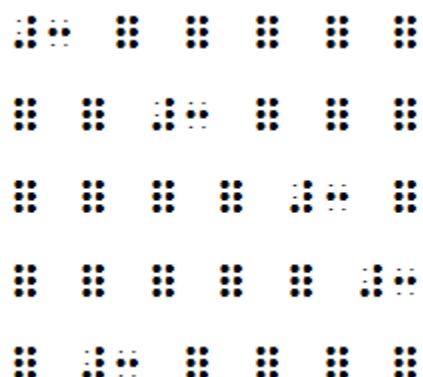
It is your turn to find the numeral 3 in each line of braille, but before we begin, tell me at least 2 helpful hints for reading braille! Did you include hands together, curved fingers, and lightly glide your fingertips across the braille from left to right?



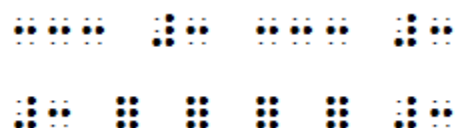
Now move your fingers across the line of braille and say “all aboard” like a conductor when you find the numeral 3!



Good job, train conductor! You found the numeral 3 in each line. Now find the numeral 3 hidden in a line of railroad cars.



Sometimes a line of braille may have more than one numeral 3. Track the next two lines of braille and find the numeral 3s.



**Fun fact:** Trains that carry cargo are typically powered by a locomotive that pulls from the front.

Okay, train conductor, continue to the next line of braille and find all of the numeral 3s.

What does a train whistle sound like? Wwwwwooooo! Let's move our fingers lightly over the braille and find the numeral 3s that are hiding in a line of railroad cars.









Let's find the numeral 3 again! This time say "wwwwooo" like the train whistle when you find the numeral 3! On some lines you find only 1 numeral 3 and on other lines you may find lots of numeral 3s.

**Fun fact:** Some people in the United States travel on a train to go to work each day!

Sometimes a line will have more than one numeral. Find the numeral 3 in each line. Say "tickets please" like a conductor when you find the numeral 3 in each line. Be careful to make sure it is a numeral 3 and not a numeral 1.


Figure 1 shows four experimental conditions (a, b, c, d) represented by 3x3 grids of dots. Condition (a) is the baseline with 9 dots. Condition (b) has 10 dots, with the center dot highlighted. Condition (c) has 5 dots, with the center dot highlighted. Condition (d) has 2 dots, with the center dot highlighted.


Way to go, train conductor! Move your fingers lightly over the braille and find some more numeral 3s that are hiding in a line of railroad cars and numeral 1s. Be sure to find only the numeral 3s.






























































**Fun fact:** America's first steam train lost a race to a horse.

Time for writing! Let's go back to the first swing cell. It contains the numeric indicator. Which dots make the numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator. Since it is closed, open the swing cell. This will help you know where your fingers will go!

Use your ring finger on the left and all three fingers on the right to write the numeric indicator on the Accessible Equation Editor and/or your braillewriter.

Now let's finish the numeral 3. Let's open the second swing cell. The pegs are in dots 2-5. Use your middle finger on both hands. You try it now in the air and then on the Accessible Equation Editor and/or your braillewriter.

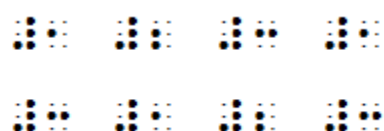
Put the two cells together and practice writing the numeral 3 in Nemeth using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals.

Now practice writing 3 several times using the Accessible Equation Editor and/or your braillewriter. When you finish writing your numerals several times, move your fingers across the braille and check your work!

**Activity time:** You will need a sheet of braille paper, your braillewriter, and three objects that remind you of a train!

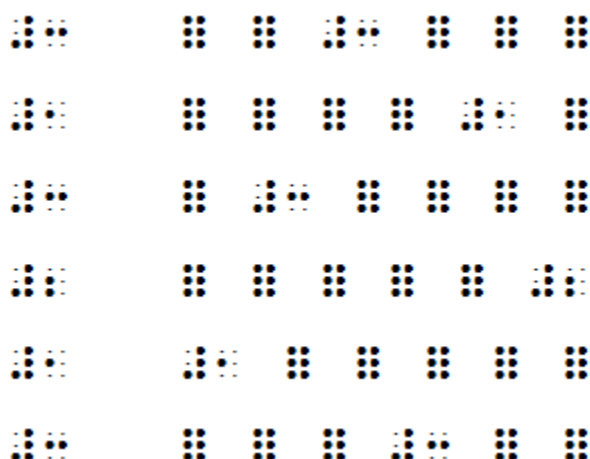
Write the numeral 3 in Nemeth. Then, glue your three trains onto the paper!

Let's practice reading numerals 1, 2, and 3.

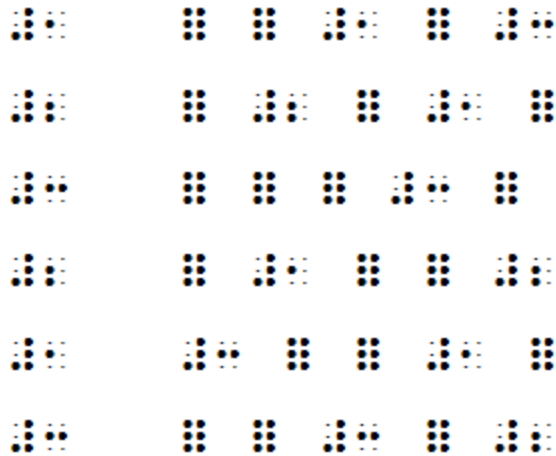


**Activity time:** Place 3 objects in a bin or bucket. Select one or more of the objects. Then count the items and braille the Nemeth numeral. Afterwards place the objects back in the bin or bucket. Now have a teacher or a friend select some objects. Then count the items and braille the Nemeth numeral!

That was great counting and writing, train conductor! Next, read the numeral at the beginning of each line and find its match on the line of braille. Make a sound like a train when you find the match! Choo choo choo!



Way to go, Nemeth superstar! Let's try some more.



**Activity time:** Use your flash cards to practice reading the numerals 1-3. Once you can read all of the numerals correctly, go back and time how quickly you can read the numerals! Do you think you can read the numerals even quicker? If so, try one more time! Good luck, train conductor!

Now you are ready for the next train stop: module 2 check-up! Thank you for all of your hard work!