

Pre-Kindergarten Nemeth Braille Code Curriculum
Module 6: Nemeth Numerals 0-10
Answer Key

All aboard the Nemeth train to learn about the numeral 0!

The numeral 0 begins with the numeric indicator in the first braille cell! It ends with dots 3-5-6 in the second braille cell.

0



Use the swing cells to build the numeral 0. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator! Way to go, counting champion!

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 3-5-6.

Note: *If you do not have a swing cell, use two muffin tins and tennis balls to make the numeral 0!*

Now it is your turn to find the numeral 0 in each line. Move your fingers across each line of braille and say "chug-chug-chug" whenever you find the numeral 0! Remember to keep your hands together and use a light touch!

Note: *If you would prefer, the student can stomp a foot whenever he/she finds a numeral 0. This option will also allow the student to keep his/her fingers on the braille. If you are using hard copy braille, the student can underline or circle the numeral 0 instead of saying "chug-chug-chug" or stomping a foot. If you would prefer, the student can also place a small sticker on top of each numeral 0.*

..... 0
 0
 0
 0
 0
 0

Answer: 0

The student will say “chug-chug-chug” each time he/she points to a numeral 0 at the following places:

Line 1: toward the middle of the line

Line 2: at the beginning of the line






Line 3: at the end of the line






Line 4: toward the middle of the line








Line 5: at the end of the line










Line 6: at the beginning of the line










You are on the right track, train conductor! You found the numeral 0 in each line. Now find the numeral 0 hidden in a line of railroad cars, which are really full braille cells.














































Answer: 

- Line 1: 2nd item in the line
- Line 2: last item in the line
- Line 3: 1st item in the line
- Line 4: 4th item in the line
- Line 5: 2nd item in the line
- Line 6: last item in the line
- Line 7: 3rd item in the line

Sometimes a line of braille may have more than one numeral 0. Move your fingers lightly across the next two lines of braille and find the numeral 0s.

Answer: 

The student should point to a numeral 0 at the following places:

- Line 1: at the beginning of the line and at the end of the line.
- Line 2: toward the beginning of the line and toward the end of the line

Fun fact: One of the oldest trains today is *Puffing Billy*. It was built in 1813 in England.

Continue to the next line of braille and find the numeral 0s. Say “tickets please” when you find the numeral 0.

Note: *If you are using hard copy braille, the student may also underline or circle the numeral 0 with a grease marker or crayon. Placing a small sticker on top of each numeral 0 is another option.*

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Answer: ⠠⠠

The student will say “tickets please” each time he/she points to a numeral 0 at the following places:

Line 1: at the beginning of the line and at the end of the line

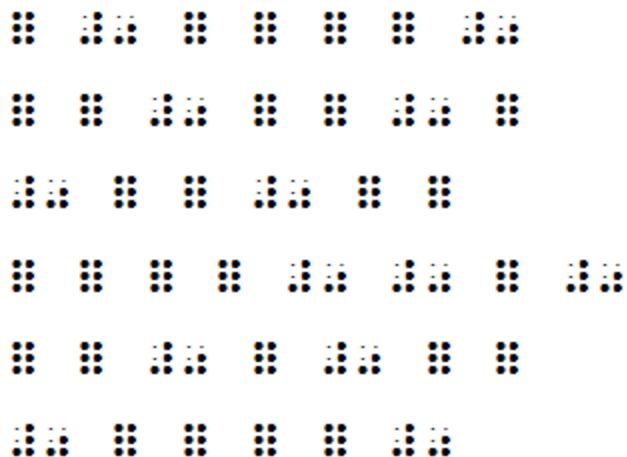
Line 2: toward the beginning of the line and toward the end of the line

Line 3: toward the beginning of the line and at the end of the line

Line 4: at the beginning of the line, toward the middle of the line, and at the end of the line

Line 5: toward the beginning of the line and toward the end of the line

Choo choo choo! Find the numeral 0s that are hiding in the line of magnet railroad cars, which are really full braille cells. Remember to keep your fingers curved!



Answer:

Line 1: 2nd and last items in the line

Line 2: 3rd and 6th items in the line

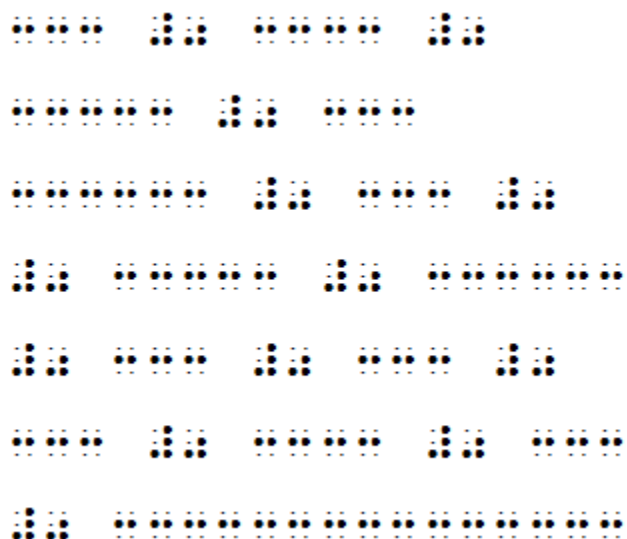
Line 3: 1st and 4th items in the line

Line 4: 5th, 6th, and last items in the line

Line 5: 3rd and 5th items in the line

Line 6: 1st and last items in the line

Let's find the numeral 0 again! This time say "wwwwooo" like a train whistle when you find the numeral 0! You may find one numeral 0 on a line, or you may find lots of numeral 0s on a line.



Answer:

The student will say “wwwwoo” each time he/she points to a numeral 0 at the following places:

Line 1: toward the beginning of the line and at the end of the line

Line 2: toward the middle of the line

Line 3: toward the middle of the line and at the end of the line

Line 4: at the beginning of the line and toward the middle of the line

Line 5: at the beginning of the line, in the middle of the line, and at the end of the line

Line 6: toward the beginning of the line and toward the end of the line

Line 7: at the beginning of the line

Fun fact: The first railroad built across the United States in the 1860s carried people to new towns in the west such as Sacramento and San Francisco, California.

Sometimes a line of braille will have more than one numeral. Find the numeral 0 in each line. Say “next stop” like a train conductor when you find the numeral 0 in each line. Be careful to make sure it is a numeral 0 and not 1, 2, 3, 4, or 5. Just find the 0s.

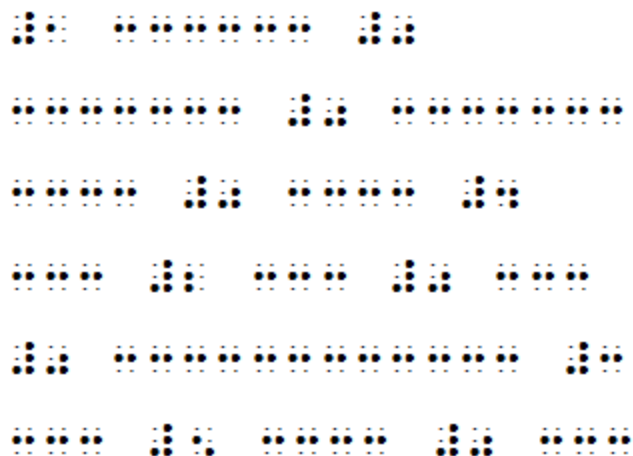
Answer:

The student will say "next stop" each time he/she points to a numeral 0 at the following places:

Line 1: at the end of the line

Line 2: toward the beginning of the line

Way to go, train conductor! Continue to the next line of braille and find the numeral 0 again.



Answer: 0

The student should point to a numeral 0 at the following places:

Line 1: at the end of the line

Line 2: toward the middle of the line

Line 3: toward the middle of the line

Line 4: toward the end of the line

Line 5: at the beginning of the line

Line 6: toward the end of the line

Activity time: You will need 6 bowls, number cards from 0-5, and an assortment of small objects for this activity.

Note: Before beginning the activity, explain that in this activity 0 means no objects.

Begin by shuffling the number cards. Draw a number card and place that many objects in the first bowl. Set the card aside. Continue the same with each of the remaining bowls. If you draw the numeral 0, you will leave the bowl empty.

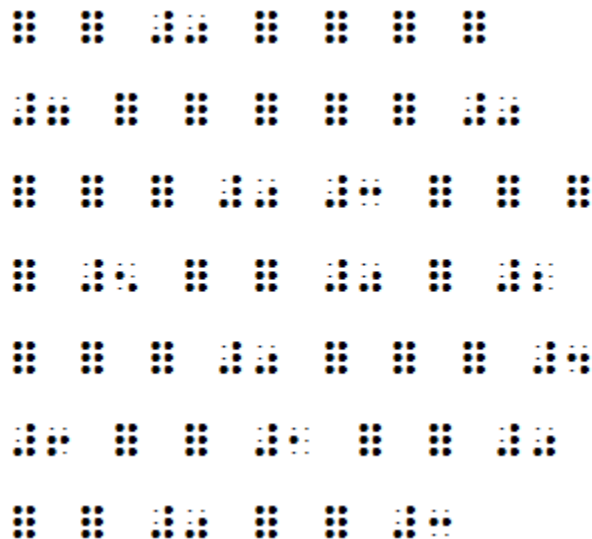
Afterwards arrange the bowls in a straight line and shuffle the number cards again. Then place each number card in front of the bowl that contains that many objects.

Note: If needed, remind the student to place the number card 0 in front of the bowl that is empty.

Way to go, math superstar!

Fun Fact: Did you know that express trains are designed to run nonstop between two cities?

Move your fingers lightly over the braille lines and find some more numeral 0s that are hiding in a line of magnet railroad cars and other numerals. Be careful to make sure it is a numeral 0 and not 1, 2, 3, 4, 5, 6, or 7. Just find the 0s.



Answer: 

Line 1: 3rd item in the line

Line 2: last item in the line

Line 3: 4th item in the line

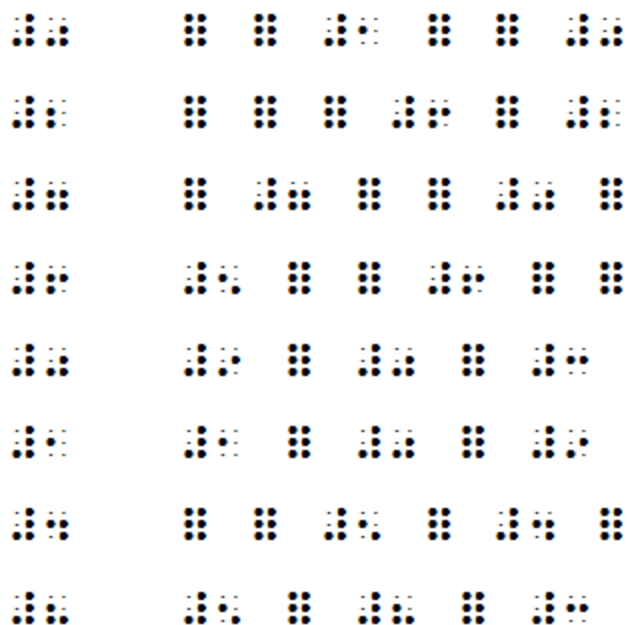
Line 4: 5th item in the line

Line 5: 4th item in the line

Line 6: last item in the line

Line 7: 3rd item in the line

Chugga chugga CHOO CHOOOOOOOO! Next, read the numeral at the beginning of each line and then find its match on the line of braille. Make a sound like a train when you find the match! Chug-chug-chug!



Answer:

The student will read the numeral at the beginning of each line, find its match, and make a sound like a train when he/she finds the match.

Line 1: 0 (last item on answer choices)

Line 2: 2 (last item on answer choices)

Line 3: 7 (2nd item on answer choices)

Line 4: 6 (4th item on answer choices)

Line 5: 0 (3rd item on answer choices)

Line 6: 1 (1st item on answer choices)

Line 7: 4 (5th item on answer choices)

Line 8: 8 (3rd item on answer choices)

Activity time: Use your flash cards to practice reading the numerals 0-9. 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!

Fun fact: The Orient Express was one of the most famous trains ever! It took passengers from Paris to Istanbul between 1883 and 1997. The Orient Express was luxurious. That means the train was super fancy!

Time for writing! Let's go back to the swing cells. First, use the pegs and make a numeric indicator again. Tell me which dots make the numeric indicator. That's right! Dots 3-4-5-6 make the numeric indicator. Afterwards, open the swing cell. This will help you know where your fingers will go when you are writing!

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

Answer: ⠠⠠

Now let's finish the numeral 0. With your second swing cell, place the pegs in dots 3-5-6. Now open the swing cell. Use the ring finger on your left hand as well as the middle and ring fingers on your right hand. You try it now in the air and then on the Accessible Equation Editor and/or your braillewriter.

Answer: ⠠⠠

Let's put the two cells together and practice writing the numeral 0 in Nemeth using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals.

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

Answer: ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ (The directions are to write the numeral 0 several times, so there may be variation in how many times 0 is written. Any length of line is considered correct.)

Activity time: You will need the Accessible Equation Editor and/or your braillewriter and braille paper for this activity. Listen as I read a numeral. Then write the numeral in braille. Space one time between the numerals.

0 1 0 2

Answer: ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠


Now press your line spacing key twice to move to the next line.

5 0 4 0

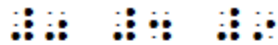
Answer: ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

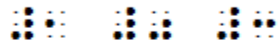
Now press your line spacing key twice to move to the next line.

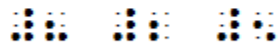
7 0 3 0

Answer: 

That was great writing, math superstar. Let's practice reading numerals one more time. There will be 3 numerals on each line.









Answer:

0 4 9

1 0 3

8 2 5

6 7 0

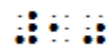
Activity time: Use your flash cards and find all of the numeral 0s. Place all of the 0s in one stack and all of the other numerals in a different stack.

Do you think you can find all the numeral 0s even quicker? Shuffle the flash cards and try one more time! Good luck, math superstar!

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

Let's explore the numeral 10 in Nemeth!

10



Notice that the numeral 10 is three braille cells in length. What is in the first braille cell? That's right! The numeral 10 begins with the numeric indicator in the first braille cell just like the other numerals. What is in the second braille cell? You got it! There is a numeral 1 in the second cell. What numeral is in the last braille cell? That's right! It is the numeral 0.

Note: *If you are using hard copy braille, the student can underline or circle the numeral 10 instead of making his/her favorite train sound. If you would prefer, the student can also place a small sticker on top of each numeral 10.*









Answer:








Line 8: in the middle of the line




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

Fun fact: Some train trips take more than one day to complete. These trains have cars with seats for the day, restaurant cars where meals are served, and sleeping cars with beds for the night.








Now move your fingers across each line of braille and find the numeral 10 hidden in a line of railroad cars, which are really full braille cells.





























Answer:  

Line 1: last item in the line

Line 2: 5th item in the line

Line 3: 1st item in the line

Line 4: 4th item in the line


Line 5: 4th item in the line

Line 6: 1st item in the line

Line 7: last item in the line


Sometimes a line of braille may have more than one numeral 10. Move your fingers lightly across the line of braille and find the numeral 10s. Remember to use a light touch and keep your fingers slightly curved.





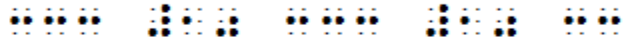
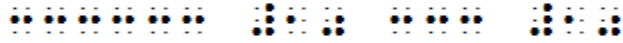
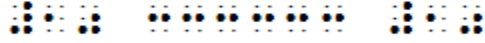
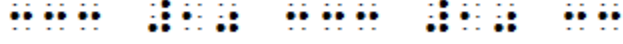





Answer:  (The student should point to the numeral 10 at the beginning of the line and then to the numeral 10 toward the middle of the line.)

Excellent reading, train conductor! Continue to the next line of braille and make a sound like a train whistle when you find each numeral 10!

Note: *If you are using hard copy braille, the student can underline or circle the numeral 10 instead of making a sound like a train whistle. If you would prefer, the student could also place a small sticker on top of each numeral 10.*

Answer: 

The student will make a sound like a train whistle each time he/she points to a numeral 10 at the following places:

Line 1: at the beginning of the line and toward the middle of the line

Line 2: toward the middle of the line and at the end of the line

Line 3: toward the middle of the line and toward the end of the line

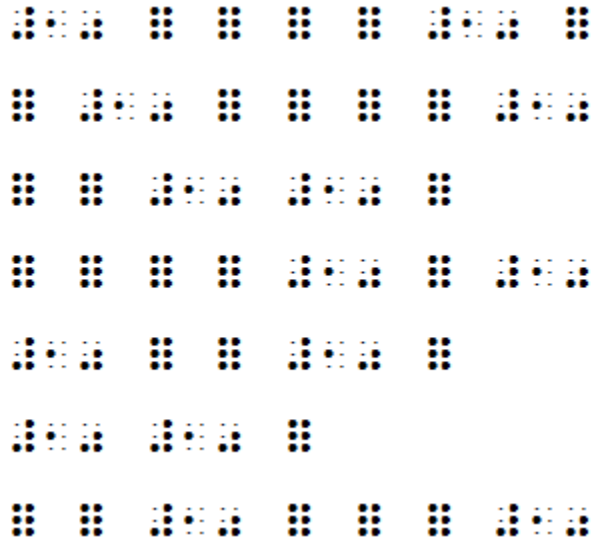
Line 4: toward the middle of the line and at the end of the line

Line 5: at the beginning of the line and at the end of the line

Line 6: toward the middle of the line and toward the end of the line

Line 7: at the beginning of the line, toward the middle of the line, and at the end of the line

Let's keep going, Nemeth superstar! Now move your fingers like a train on train tracks across the line of braille and find all of the numeral 10s. They are hidden in a line of railroad cars, which are really full braille cells. Make a sound like a train each time you find the numeral 10!



Answer:

The student will make a sound like a train whistle each time he/she points to a numeral 10 at the following places:

Line 1: 1st and 6th items in the line

Line 2: 2nd and last items in the line

Line 3: 3rd and 4th items in the line

Line 4: 5th and last items in the line

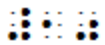
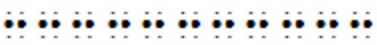






Line 5: 1st and 4th items in the line

Line 6: 1st and 2nd items in the line

Line 7: 3rd and last items in the line

Fun fact: The longest train trip in the world without changing trains is in Russia and takes eight days to finish! That is a long time to spend on a train!

Let's find more numeral 10s. Say "clickety clickety clack" when you find the numeral 10 in each line. Be careful to make sure it is a numeral 10 and not a numeral 2, 3, 4, or 5. Just find the 10s.

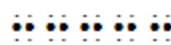
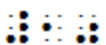
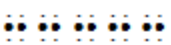

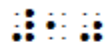
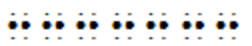


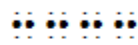


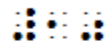
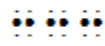

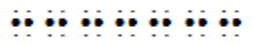

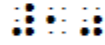
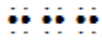



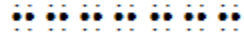



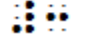
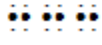








Answer: 

The student will say “clickety clickety clack” each time he/she points to a numeral 10 at the following places:

Line 1: at the beginning of the line

Line 2: toward the end of the line

Way to find the numeral 10s, math champion! Continue to the next lines of braille and find the numeral 10s. Say “tickets please” when you find the numeral 10.

Answer: 

The student will say “tickets please” each time he/she points to a numeral 10 at the following places:

Line 1: toward the middle of the line

Line 2: at the beginning of the line

Line 3: at the end of the line

Line 4: at the end of the line

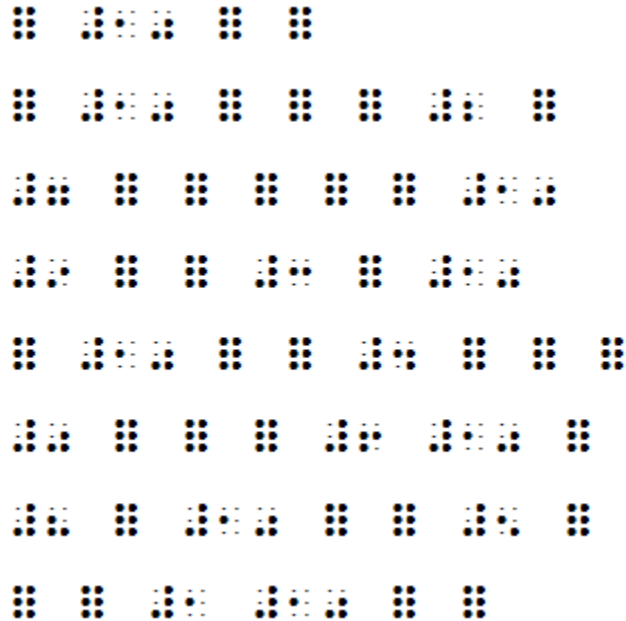
Line 5: at the beginning of the line

Line 6: toward the middle of the line

Line 7: at the end of the line

Line 8: toward the beginning of the line

Find the numeral 10s that are hiding in a line of railroad cars and numerals 0-9. Remember to find only the numeral 10s.



Answer:

Line 1: 2nd item in the line

Line 2: 2nd item in the line

Line 3: last item in the line

Line 4: last item in the line

Line 5: 2nd item in the line

Line 6: 6th item in the line

Line 7: 3rd item in the line

Line 8: 4th item in the line

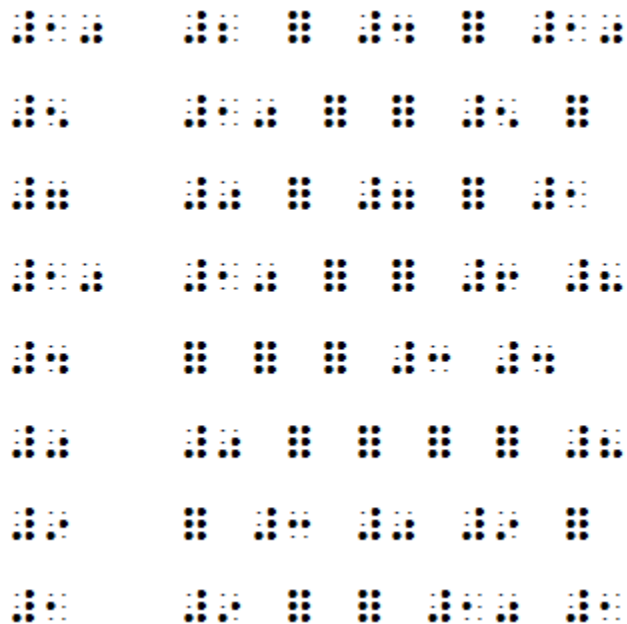
Fun fact: Just like cars and trucks, trains have headlights at the front to make it easier to see that the train is coming. At night, engineers totally

need that headlight to see, and stuff gets on the tracks all the time. During the day, the headlight is so other people can see the train - like at road crossings, etc.

Activity time: You will need your flash cards from 0-10 and Unifix cubes or other cubes that can be snapped together. If you do not have the Unifix or snap cubes, you can also use MegaBlocks, Legos, or teddy bear manipulatives designed for preschoolers.

Draw a card and then read the numeral. Then build a train using that number of Unifix or snap cubes. If you would like, you and a friend (or your teacher) can take turns drawing cards and building a train!

That was super reading and counting, math all-star! Now read the numeral at the beginning of each line and then find its match on the line of braille. Make a fun train sound when you find the match! Chug-chug-chug!



Answer:

The student will read the numeral at the beginning of each line, find its match, and make a fun train sound when he/she finds the match.

Line 1: 10 (last item on answer choices)

Line 2: 5 (4th item on answer choices)

Line 3: 7 (3rd item on answer choices)

Line 4: 10 (1st item on answer choices)

Line 8: 1 (last item on answer choices)

Let's practice reading numerals 0 to 10 once more.

2 0 5 8

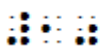
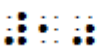
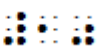
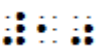
Time for writing on the Accessible Equation Editor and/or your braillewriter! Begin the numeral 10 with a numeric indicator. Use your ring finger on your left hand and all three fingers on your right hand to write the numeric indicator on the Accessible Equation Editor and/or your braillewriter. Next,

use your middle finger on your left hand and press the dot 2. To finish the numeral 10 in the third cell, use your middle finger on your left hand and your middle and ring fingers on your right hand.

Answer: 

Let's put the three cells together and practice writing the numeral 10 in Nemeth using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals.

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

Answer:     (The directions are to write the numeral 10 several times, so there may be variation in how many times 10 is written. Any length of line is considered correct.)

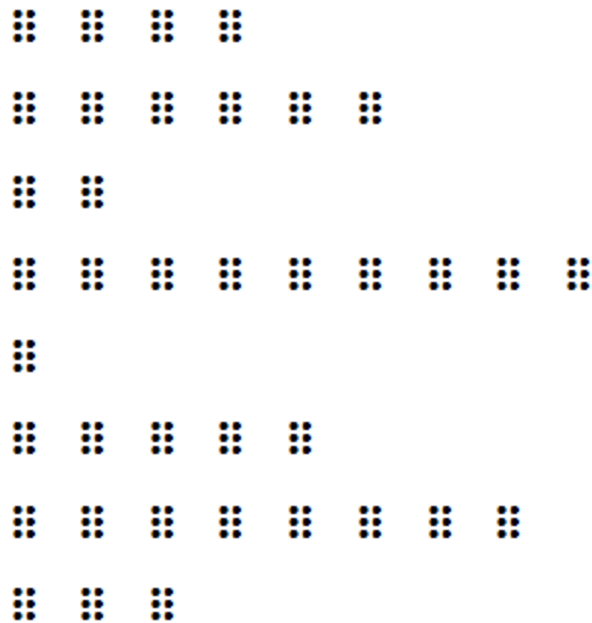
Activity time: You will need a sheet of braille paper, your braillewriter, and ten objects that remind you of a train!

Write the numeral 10 in Nemeth. Then, glue your ten trains onto the paper!


Fun fact: Railroads are sometimes built in areas with mountains. Trains travel on bridges and in tunnels to pass through the steep mountains and valleys.


That was great counting and writing! Let's practice writing numerals with another activity.


Activity time: Count the number of full braille cells in each line. Then write the number using the Accessible Equation Editor and/or your braillewriter. Space one time between your answers.





Answer:


Line 1:  (4)


Line 2:  (6)


Line 3:  (2)

Line 4:  (9)

Line 5:  (1)

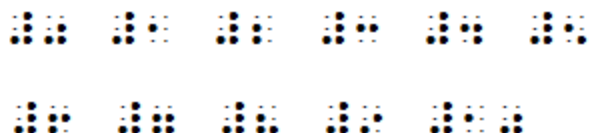
Line 6:  (5)

Line 7:  (8)

Line 8:  (3)

Fun fact: When there is a lot of snow on the railroad tracks in winter, special trains with a snowplow or snow blower clear the track so that other trains can travel safely!

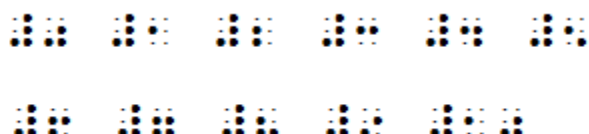
All aboard the Nemeth train! Read the numbers that are in order from 0 to 10.



Answer:

0 1 2 3 4 5
6 7 8 9 10

Go to the next line of braille and read the numbers from 0 to 10 again.



Answer:

0 1 2 3 4 5
6 7 8 9 10

Activity time: You will need flash cards with numbers from 0 to 10. Shuffle the flash cards. Then place the numbers in order from 0 to 10.

Note: *If needed, provide the student with a hard copy of numbers in order to use as a model. It may also help to place the flash cards 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 flash card and then arrange the flash cards on a long strip of Velcro on the student's desk. You can also paste the flash cards in place on a large piece of construction paper when they are correctly laid out.*

If additional practice is needed, this activity can be completed two or more times.

Using the numbers 0 to 10 in braille or your flash cards in order, tell me what number comes after 9. That's right! 10 comes after 9. Now tell me what number comes after 3. That's right! 4 comes after 3. What number comes after 7? You got it now! 8 comes after 7.

Using the numbers in braille or your flash cards in order, tell me what number comes before 4. Way to go! 3 comes before 4. Let's try another one. Tell me what number comes before 10. That's right. 9 comes before 10.

Now practice writing your numerals 0 to 10 using the Accessible Equation Editor and/or your braillewriter. Space one time between your numerals. When you finish writing, move your fingers across the braille and read the numerals that you wrote!

Answer:

⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠
⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠

Activity time: Let's continue to build our number train. You will need: railroad cars with numerals 1-9 from the last module, brightly colored construction paper or braille paper cut into train car shapes, glue stick, and braille numerals 0 and 10 on small cards.

First, find the numeral 0 and glue it onto a railroad car. Then, find the numeral 10 and glue it onto another railroad car. Then put the railroad cars into order from 0 to 10. If you would like, you can "decorate" with scented stickers, Wikki Stix, buttons, or textured paper.

Now you are ready for the last train stop: module 6 check-up! Thank you for all of your hard work! You are a Nemeth all-star!

Follow-up activity:

Create a counting book from 1 to 10 by using objects that can be easily counted like one smooth button, two birthday candles, three foam triangles, four keys, etc.

You will need: book made of poster board, a variety of small objects, glue stick, sticky-back strips of Velcro, sticky-back circles of Velcro, and braille numerals 1 through 10 on small cards. We will use Velcro so that you can take the objects out of the book easily when counting!

Note: *If preferred, you can use a book made of cardboard from a craft store. Removable objects can also be changed by the child to easily create a different counting book. If preferred, you can use hot glue instead of Velcro to attach the objects. More information about making counting books is available on the Paths to Literacy website (www.pathstoliteracy.org) and in *Beginning with Braille: Firsthand Experiences with a Balanced Approach to Literacy* by Anna Swenson from AFB Press (www.afb.org/store).*

First, find the numeral 1 and glue it onto the upper left corner of the first page of the book. Afterwards, find the numeral 2 and glue it onto the upper

left corner of the next page. Continue to find the numbers in order and then glue each one onto the upper left corner of a different page.

Once you have finished locating and gluing the numerals onto the pages, attach a Velcro strip horizontally in the middle of each page. For the pages with numerals 6-10 on them, attach a second Velcro strip slightly below the first Velcro strip.

Next decide which object will be used with the numeral 1 and then glue a Velcro circle onto the back of the item. Then attach the item with the Velcro circle onto the long Velcro strip on the page with the numeral 1. Complete the same process for all of the numerals.

Then have fun reading and counting the objects in your counting book!