

Pre-Kindergarten Nemeth Braille Code Curriculum
Module 5: Nemeth Numerals 8-9
Answer Key

All aboard the Nemeth train to learn about the numeral 8!

Just like the numerals 1-7 that you have learned, the numeral 8 begins with the numeric indicator in the first braille cell! It ends with dots 2-3-6 in the second braille cell.

8



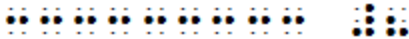
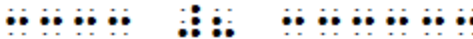
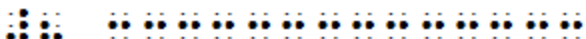
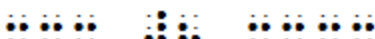
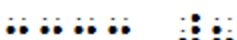
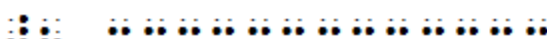
Use the swing cells to build the numeral 8. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make the numeric indicator! Way to go, math superstar!

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 2-3-6.

Note: *If you do not have a swing cell, use two muffin tins and tennis balls to make the numeral 8!*

Now it is your turn to find the numeral 8 in each line. Move your fingers across each line of braille and say "all aboard" whenever you find the numeral 8! Remember to keep your fingers curved 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 8 instead of saying "all aboard" or stomping a foot. If you would prefer, the student can also place a small sticker on top of each numeral 8.*

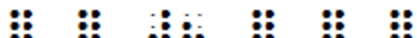
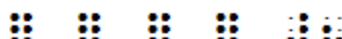



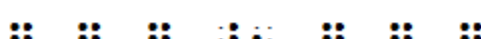







Answer: 

The student will say “all aboard” each time he/she points to a numeral 8 at the following places:

- Line 1: at the end of the line
- Line 2: toward the middle of the line
- Line 3: at the beginning 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

Good job, train conductor! You found the numeral 8 in each line. Now find the numeral 8 hidden in a line of railroad cars, which are really full braille cells.

Answer: ⠠⠠⠠

Line 1: 3rd item in the line

Line 2: last item in the line

Line 3: 1st item in the line

Line 4: 8th (next to the last) item in the line

Line 5: 2nd item in the line

Line 6: 4th item in the line

Sometimes a line of braille may have more than one numeral 8. Move your fingers lightly across the next two lines of braille and find the numeral 8s.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠
⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠

Answer: ⠠⠠⠠

The student should point to a numeral 8 at the following places:

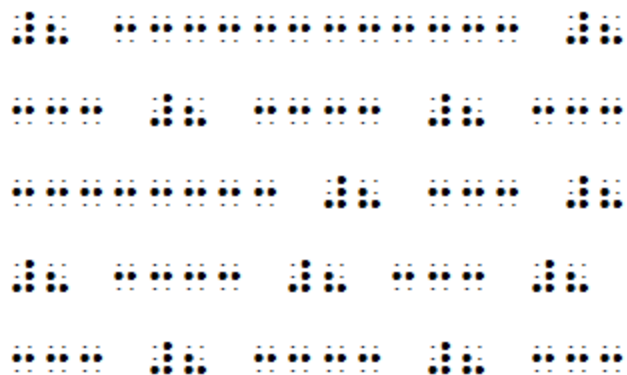
Line 1: slightly before the middle of the line and slightly after the middle of the line

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

Fun fact: There are 489 subway train stations in New York City! Is there a subway train station where you live?

Continue to the next line of braille and find the numeral 8s. Say "tickets please" when you find the numeral 8.

Note: *If you are using hard copy braille, the student may also underline or circle the numeral 8 with a grease marker or crayon. Placing a small sticker on top of each numeral 8 is another option.*



Answer: 

The student will say "tickets please" each time he/she points to a numeral 8 at the following places:

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

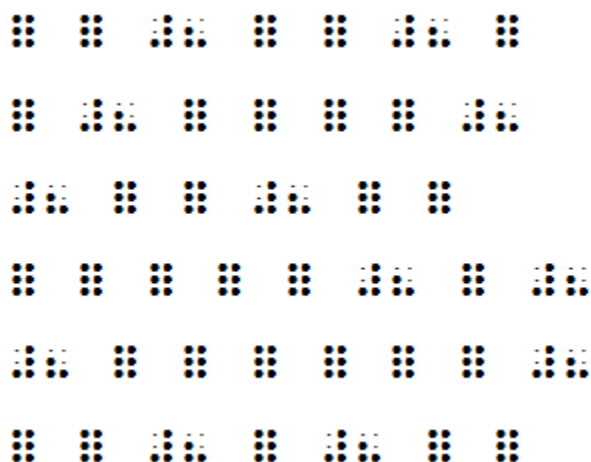
Line 2: slightly before the middle of the line and toward the end of the line

Line 3: slightly after the middle of the line and at the end of the line

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

Line 5: slightly before the middle of the line and toward the end of the line

Chug-chug-chug-chug! Find the numeral 8s 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: 3rd and 6th items in the line

Line 2: 2nd and last items in the line

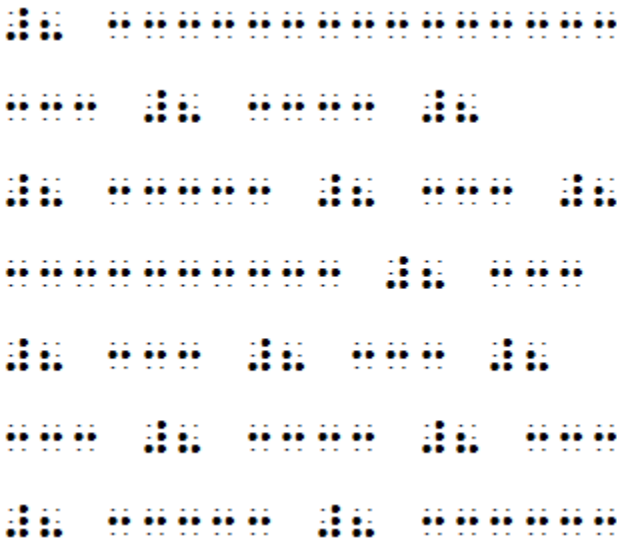
Line 3: 1st and 4th items in the line

Line 4: 6th and last items in the line

Line 5: 1st and last items in the line

Line 6: 3rd and 5th items in the line

Let's find the numeral 8 again! This time say "wwwwooo" like a train whistle when you find the numeral 8! You may find only one numeral 8 on a line, or you may find lots of numeral 8s on a line.



Answer: 

The student will say "wwwwooo" each time he/she points to a numeral 8 at the following places:

Line 1: at the beginning of the line

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

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

Line 4: toward the end of the line

The student will say “next stop” each time he/she points to a numeral 8 at the following places:

Line 1: at the end of the line

Line 2: in the middle of the line

Line 3: slightly before the middle of the line

Line 4: slightly after the middle of the line

Line 5: at the beginning of the line

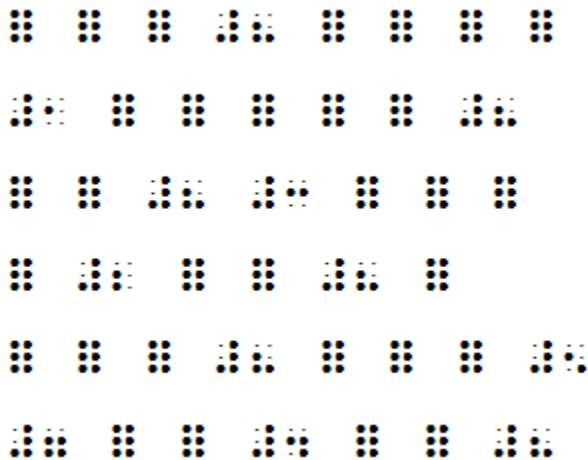
Line 6: toward the end of the line

Super job!

Fun Fact: Did you know that there are no subway train stations in some states, including South Carolina and North Dakota?

Have you ever been on a subway or visited a subway train station? If so, tell me about your experience.

Move your fingers lightly over the braille lines and find some more numeral 8s that are hiding in a line of magnet railroad cars and other numerals. Be careful to make sure it is a numeral 8 and not 1, 2, 3, 4, 5, 6, or 7. Just find the 8s.



Answer: 

Line 1: 4th item in the line

Line 2: last item in the line

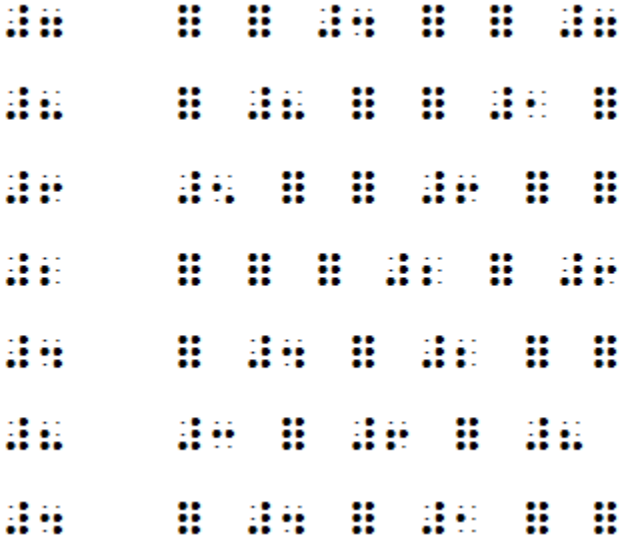
Line 3: 3rd item in the line

Line 4: 5th item in the line

Line 5: 4th item in the line

Line 6: last item in the line

Chugga chugga CHOO CHOOOOOOOOO! 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:

Line 1: 7 (last item on answer choices)

Line 2: 8 (2nd item on answer choices)

Line 3: 6 (4th item on answer choices)

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

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

Line 6: 8 (last item on answer choices)

Line 7: 4 (2nd item on answer choices)

Activity time: Use your flash cards to practice reading the numerals 1-8. 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: Some train horns sound like “waaank”.

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 8. With your second swing cell, place the pegs in dots 2-3-6. Now open the swing cell. Use the middle and ring fingers on your left hand as well as the ring finger 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 8 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 8 several times, so there may be variation in how many times the numeral 8 is written. Any length of line is considered correct.)

Activity time: You will need a sheet of braille paper and your braillewriter. Use your braillewriter to create 8 lines of full braille cells and numeral 8s for you, a teacher and/or a friend to read.

Make some of your lines long and some of the lines short. Use your thumb to space one time between your full braille cells and the numeral 8s. Also push your line spacing key twice at the end of a line to double space your lines of braille.

When you are finished, check your work and have fun reading the lines of braille you created! Then count how many numeral 8s are on each line.

Now try to find the shortest line and then the longest line. Don't forget to let a teacher or friend read the braille too!

That was great reading and writing, math superstar. Let's practice reading numerals one more time.

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

⠠⠠⠠⠠⠠⠠⠠⠠

Answer:

8 4 1 7 3

8 2 5 6

Activity time: Use your flash cards and find all of the numeral 8s. Place all the 8s in one stack and all of the other numerals in a different stack.

Do you think you can find all the numeral 8s 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 9 in Nemeth!

9

⠠⠠⠠

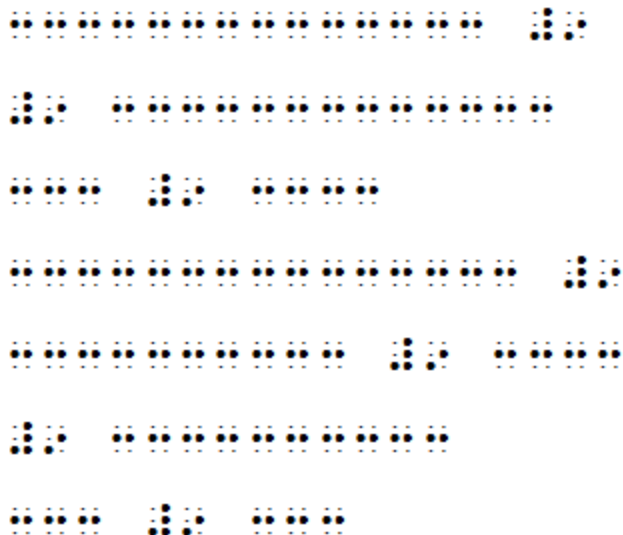
Numeral 9 begins with the numeric indicator in the first braille cell and ends with dots 3-5 in the second braille cell! Now let's use the swing cell. It is your turn to build the numeral 9 with a swing cell. Do you remember the dots that make a numeric indicator? That's right! Dots 3-4-5-6 make a numeric indicator!

Begin by using the pegs to make the numeric indicator in the first swing cell. Then move to the second swing cell and place pegs in dots 3-5. Congratulations! You made the numeral 9.

Note: *If you do not have two swing cells, use two muffin tins and balls.*

Now it is your turn to find the numeral 9 in each line of braille. Move your fingers lightly across the line of braille and make your favorite train sound when you find the numeral 9!

Note: *If you are using hard copy braille, the student can underline or circle the numeral 9 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 9.*

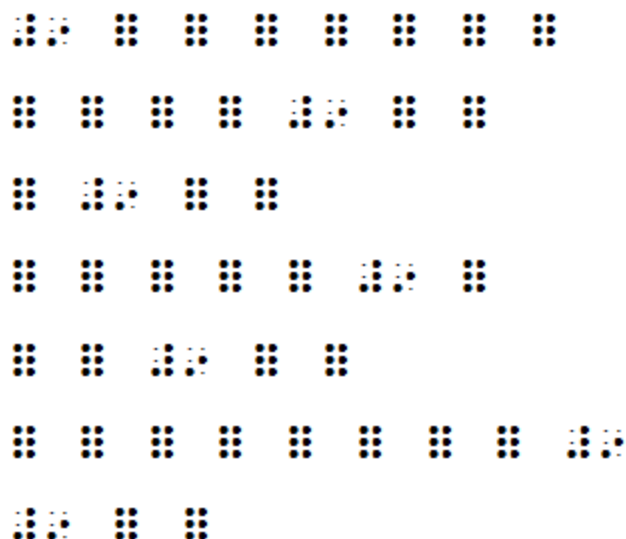


Answer: 9

The student will make his/her favorite train sound each time he/she points to a numeral 9 at the following places:

- Line 1: at the end of the line
- Line 2: at the beginning of the line
- Line 3: toward the middle of the line
- Line 4: at the end of the line
- Line 5: toward the end of the line
- Line 6: at the beginning of the line
- Line 7: in the middle of the line

Whooooosh along the rails! You found the numeral 9s. Now move your fingers across each line of braille and find the numeral 9 hidden in a line of railroad cars, which are really full braille cells.



Answer:

Line 1: 1st item in the line

Line 2: 5th item in the line

Line 3: 2nd item in the line

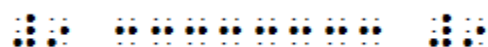
Line 4: 6th (next to the last) item in the line

Line 5: 3rd item in the line

Line 6: last item in the line

Line 7: 1st item in the line

Sometimes a line of braille may have more than one numeral 9. Move your fingers lightly across the line of braille and find the numeral 9s. Remember to use a light touch and keep your fingers slightly curved.



Answer:

The student should point to the numeral 9 at the beginning of the line and then to the numeral 9 at the end 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 9!

Note: *If you are using hard copy braille, the student can underline or circle the numeral 9 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 9.*

⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠
⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠
⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠
⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠
⠠⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠ ⠠⠠
⠠⠠ ⠠⠠⠠ ⠠⠠ ⠠⠠⠠ ⠠⠠

Answer: ⠠⠠

The student will make a sound like a train whistle each time he/she points to a numeral 9 at the following places:

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

Line 2: slightly before the middle of the line and at the end of the line

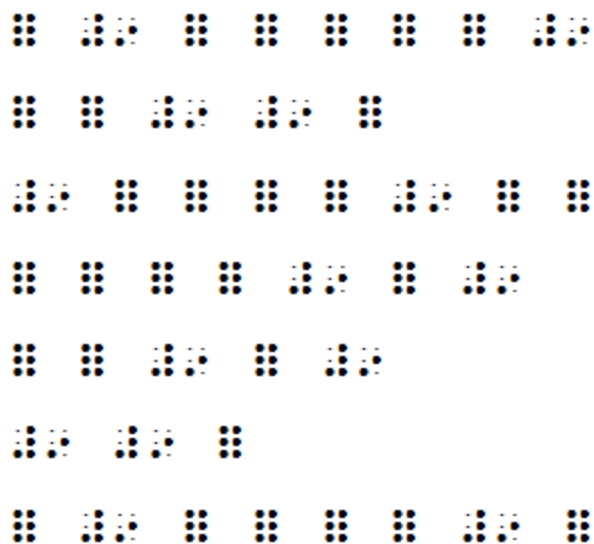
Line 3: in the beginning of the line and at the end of the line

Line 4: slightly before the middle of the line and slightly after the middle of the line

Line 5: toward the middle of the line and at the end of the line

Line 6: at the beginning of the line, in the middle of the line and at the end of the line

Let's keep going! Now move your fingers like a train on train tracks across the line of braille and find all of the numeral 9s. 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 9!



Answer: 9

The student will make a sound like a train each time he/she points to a numeral 9 at the following places:

Line 1: 2nd and last items in the line

Line 2: 3rd and 4th items in the line

Line 3: 1st and 6th items in the line

Line 4: 5th and last items in the line

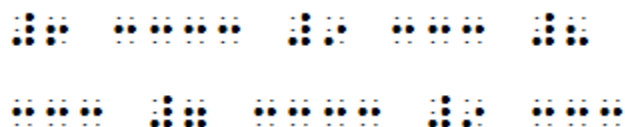
Line 5: 3rd and last items in the line

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

Line 7: 2nd and 7th items in the line

Fun fact: Many trains use air brakes today, just like 18 wheelers.

Let's find more numeral 9s. Say "clickety clack" when you find the numeral 9 in each line. Be careful to make sure it is a numeral 9 and not a numeral 6, 7, or 8. Just find the 9s.



Answer: 9

The student will say "clickety clack" each time he/she points to a numeral 9 at the following places:

Line 1: in the middle of the line

Line 2: toward the end of the line

Way to go, math superstar! Continue to the next lines of braille and find the numeral 9s. Say "the wheels on the train go round and round" when you find the numeral 9.

..... 9 9
9 9
..... 9 9
..... 9 9
..... 9 9
9 9 9
..... 9 9

Answer: 9

The student will say "the wheels on the train go round and round" each time he/she points to a numeral 9 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

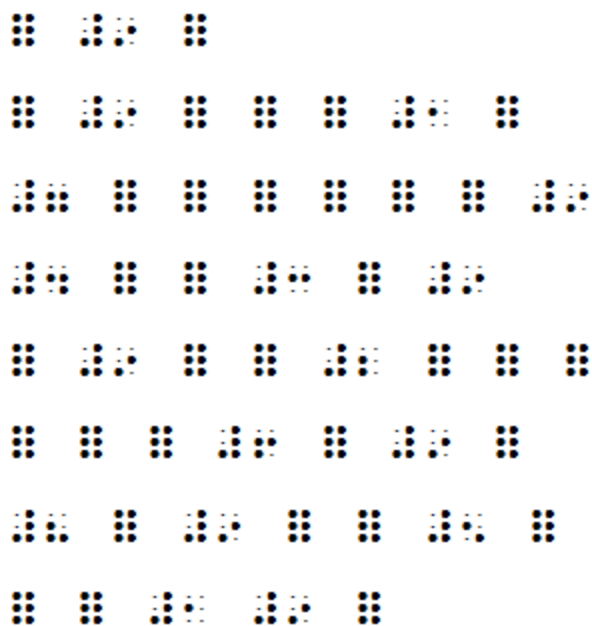
Line 4: at the end of the line

Line 5: toward the middle of the line

Line 6: at the end of the line

Line 7: toward the middle of the line

Find the numeral 9s that are hiding in a line of railroad cars and numerals 1-8. Remember to find only the numeral 9s.



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

Activity time: You will need your flash cards and Unifix cubes or other cubes that can be snapped together.

Note: *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 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!

Now let's practice reading numerals 1 to 9.

⠠⠨⠠⠠⠠⠠⠠⠠⠠⠠⠠

⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Answer:

9 1 8 7 4

3 9 6 2 5 8

Activity time: Use your flash cards to practice reading the numerals 1-9. 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! You can do it, train conductor!

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

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 9. On the second swing cell, place the pegs in dots 3-5. Use your ring finger on your left hand and your middle finger on your right hand. Since the swing cell is closed, open the swing cell. This will help you know where your fingers will go for the second part of the numeral! 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 9 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 9 several times, so there may be variation in how many times the numeral 9 is written. Any length of line is considered correct.)

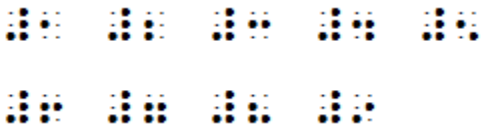
Activity time: You will need a sheet of braille paper, your braillewriter, and nine objects that remind you of a train!

Write the numeral 9 in Nemeth. Then, glue your nine trains onto the paper!

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

Activity time: Place 9 objects in a bin or bucket. Select some or all 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!

All aboard the Nemeth train! Read the numbers that are in order from 1 to 9.

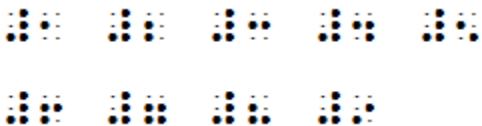


Answer:

1 2 3 4 5

6 7 8 9

Go to the next line of braille and read the numbers from 1 to 9 again.



Answer:

1 2 3 4 5

6 7 8 9

Activity time: You will need flash cards with numbers from 1 to 9. Shuffle the flash cards. Then place the numbers in order from 1 to 9.

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 the student is reading the cards. You may 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.*

Using the numbers 1 to 9 in braille or your flash cards in order, tell me what number comes after 8. That's right! 9 comes after 8. Now tell me what number comes after 3. That's right! 4 comes after 3. What number comes after 6? You got it now! 7 comes after 6.

Using the numbers in braille or your flash cards in order, tell me what number comes before 3. Way to go! 2 comes before 3. Let's try another one. Tell me what number comes before 9. That's right. 8 comes before 9.

Now practice writing your numerals 1 to 9 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:

1 2 3 4 5
6 7 8 9

Activity time: Let's continue to build our number train. You will need: railroad cars with numerals 1-7 from the last module, brightly colored construction paper or braille paper cut into train car shapes, glue stick, and braille numerals 8-9 on small cards.

First, find the numeral 8 and glue it onto a railroad car. Then, find the numeral 9 and glue it onto another railroad car. Then put the railroad cars into order from 1 to 9. If you would like, you can "decorate" with scented stickers, Wikki sticks, buttons, or textured paper.

Now you are ready for the next train stop: module 5 check-up! Thank you for all of your hard work!

Follow-up activity:

Note: *Before beginning the activity, have the student wash his/her hands.*

Have fun making a graham cracker train snack! You will need graham crackers, vanilla wafers, and Cheerios. The first step in building your train snack is to break a sheet of graham crackers into four parts. Then count out 8 vanilla wafers and 8 Cheerios. Then use the graham crackers to create 4 railroad cars with two vanilla wafers for wheels on each railroad car. The Cheerios can be used to create the exhaust and steam coming from the engine.

Once you finish making your train, enjoy your snack! Eat one of your railroad cars and its wheels, and then figure out how many railroad cars and wheels you have left. Then if you are still hungry, eat another railroad car and its wheel, and then figure out how many railroad cars and wheels you have left.