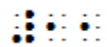
Kindergarten Nemeth Braille Code Curriculum
Module 2: Nemeth Numbers 11-15 and General Omission Symbol

Before we begin our bicycle ride, find the first line of braille on the page. It is at the top of the page. Softly glide your fingers across the line.

It says Module 2. Now move your hands down to the second line of braille on the page. There is just one symbol on the second line. It is on the left side of the page.

Do you remember that this symbol is called an opening Nemeth Code indicator? It tells us that we are going to read math or science. Dots 4-5-6 are in the first cell, and dots 1-4-6 are in the second cell.

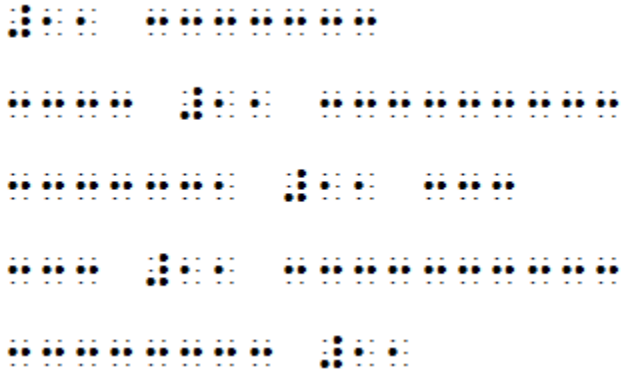
On your mark, get set, go! It's time for another cross country bicycle ride! For the first leg of the trip, let's explore the number 11.



The number 11 begins with the numeric indicator in the first braille cell. It is followed by a dot 2 in the second braille cell. It ends with a dot 2 in the last braille cell. The digits in the Nemeth Code are placed in the bottom part of the cell.

Now it is your turn to find the number 11 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 bicycle bell when you find the number 11!

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.*



Answer: 

The student will make a sound like a bicycle bell each time he/she points to a number 11 at the following places:

Line 1: at the beginning of the line

Line 2: toward the middle of the line

Line 3: toward the end of the line

Line 4: toward the middle of the line

Line 5: at the end of the line

Sometimes a line of braille may have more than one number 11. Move your fingers lightly across the lines of braille and find all of the number 11s.

Answer: 

The student will make a sound like a bicycle bell each time he/she points to a number 11 at the following places:

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

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

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

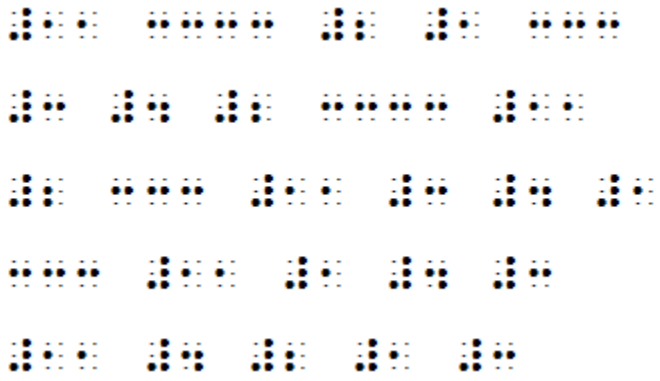
Line 4: slightly before the middle of the line and slightly after the middle of the line

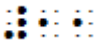
Line 5: at the beginning of the line, in the middle of the line, and at the end of the line

Fun fact: In the 1800s bicycles were called “velocipedes”.

Let's find more number 11s. Say "bicycle" when you find the number 11 in each line. Be careful to make sure it is a number 11 and not a number 1, 2, 3, or 4.

Note: *If you would prefer, the student can stomp a foot whenever he/she finds a number 11. 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 number 11 instead of saying "bicycle" or stomping a foot. If you would prefer, the student can also place a small sticker on top of each number 11.*



Answer: 

The student should point to a number 11 and say "bicycle" at the following places:

Line 1: at the beginning of the line

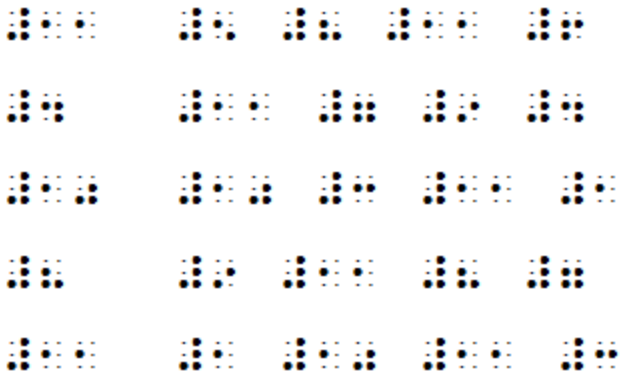
Line 2: at the end of the line

Line 3: toward the middle of the line

Line 4: toward the middle of the line

Line 5: at the beginning of the line

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



Answer:

The student will read the number at the beginning of each line, find its match, and say “pedal faster” when he/she finds the match.

Line 1: 11 (3rd item on answer choices)

Line 2: 4 (last item on answer choices)

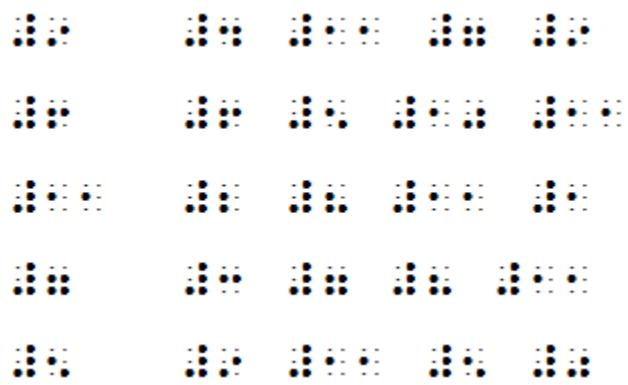
Line 3: 10 (1st item on answer choices)

Line 4: 8 (3rd item on answer choices)

Line 5: 11 (3rd item on answer choices)

Fun fact: BMX stands for bicycle motocross. BMX racing started in the 1970s in Southern California and quickly became popular throughout the world.

Let’s try a few more!



Answer:

The student will read the number at the beginning of each line, find its match, and say “pedal faster” when he/she finds the match.

Line 1: 9 (last item on answer choices)

Line 2: 6 (1st item on answer choices)

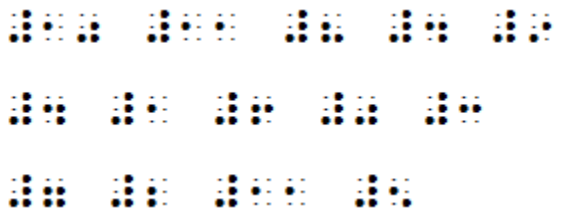
Line 3: 11 (3rd item on answer choices)

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

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

Activity time: Use your flash cards to practice reading the numbers 0-11. 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!

Excellent reading, BMX super star! Continue to the next line of braille and practice reading the numbers 0-11.



Answer:

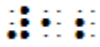
10 11 8 4 9

4 1 6 0 3

7 2 11 5

Fun fact: BMX racers compete on dirt tracks with ramps and a finish line.

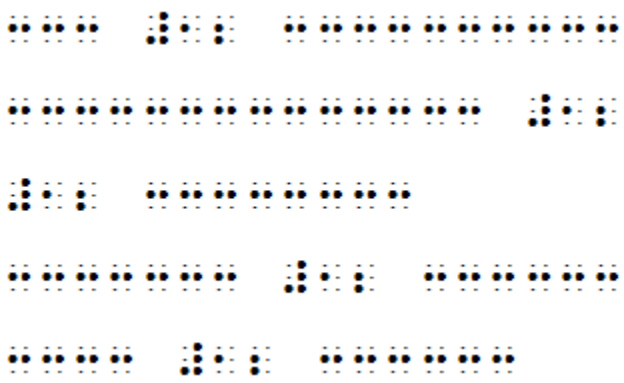
Reading braille numbers is lots of fun. Let's explore the number 12.



The number 12 begins with the numeric indicator in the first braille cell. It is followed by a dot 2 in the second braille cell. It ends with dots 2-3 in the last braille cell. The digits of numbers in the Nemeth Code are placed in the bottom part of the cell.

Now it is your turn to find the number 12 in each line of braille. 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 bicycle tire when you find the number 12!

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.*



Answer: 

The student will make a sound like a bicycle tire each time he/she points to a number 12 at the following places:

Line 1: toward the beginning of the line

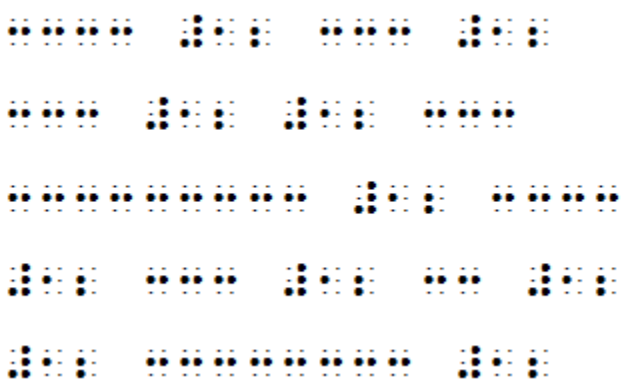
Line 2: at the end of the line

Line 3: at the beginning of the line

Line 4: toward the middle of the line

Line 5: toward the middle of the line

Sometimes a line of braille may have more than one number 12. Move your fingers lightly across the lines of braille, find all of the number 12s, and continue to make a sound like a bicycle tire each time you find the number.



Answer: 

The student will make a sound like a bicycle tire each time he/she points to a number 12 at the following places:

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

Line 2: twice toward the middle of the line

Line 3: slightly after the middle of the line

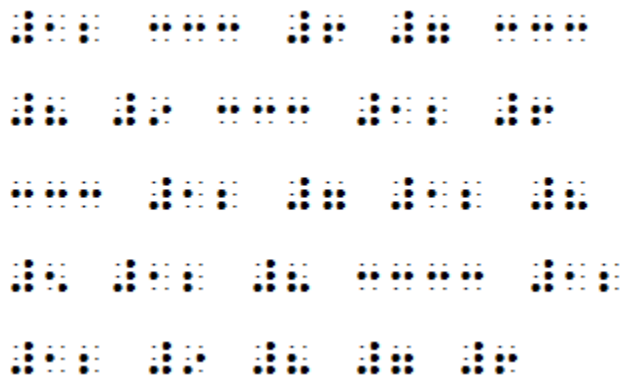
Line 4: at the beginning of the line, in the middle of the line, and at the end of the line

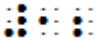
Line 5: at the beginning of the line and at the end of the line

Fun fact: BMX freestyle bikes can be used to do tricks at parks, trails, and half-pipes.

Let's find more number 12s. Say "wear a helmet when riding a bike" when you find the number 12 in each line. Be careful to make sure it is a number 12 and not a number 5, 6, 7, 8, or 9.

Note: *If you would prefer, the student can stomp a foot whenever he/she finds a number 12. 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 number 12 instead of saying "wear a helmet when riding a bike" or stomping a foot. If you would prefer, the student can also place a small sticker on top of each number 12.*



Answer: 

The student should point to a number 12 and say "wear a helmet when riding a bike" at the following places:

Line 1: at the beginning of the line

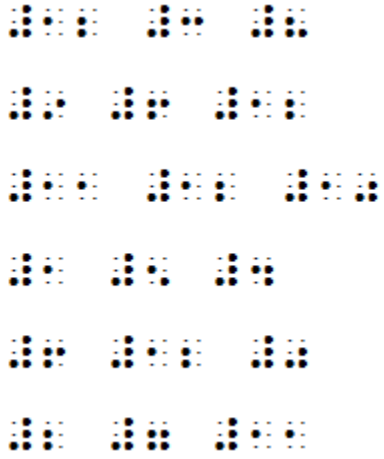
Line 2: toward the end of the line

Line 3: slightly before 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

That was great reading, Nemeth superstar. Let's practice reading some more numbers from 0-12. There will be 3 numbers on each line.



Answer:

12 3 8

9 6 12

11 12 10

1 5 4

6 12 0

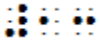
2 7 11

Activity time: Use your flash cards and find all of the number 12s. Place all of the 12s in one stack and all of the other numbers in a different stack.

Do you think you can find all the number 12s even quicker? Shuffle the flash cards and try one more time! Good luck, bicyclist!

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

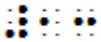
That was super reading, math all-star! For the second leg of the trip, let's explore the number 13 in Nemeth!



Notice that the number 13 is also three braille cells in length. What is in the first braille cell? That's right! The number 13 begins with the numeric indicator in the first braille cell just like the other numbers. What is in the second braille cell? You got it! The digit 1 is in the second cell. What is in the last braille cell? That's right! The digit 3 is in the last cell.

Now it is your turn to find the number 13 in each line of braille. Move your fingers lightly across the line of braille and make your favorite bicycle sound when you find the number 13!

Note: *If you are using hard copy braille, the student can underline or circle the number 13 instead of making his/her favorite bicycle sound. If you would prefer, the student can also place a small sticker on top of each number 13.*

Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 13 at the following places:

Line 1: at the beginning of the line

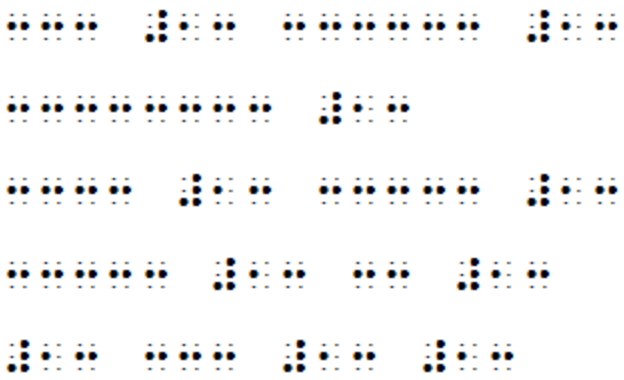
Line 2: at the middle of the line

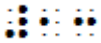
Line 3: at the end of the line

Line 4: toward the end of the line

Fun fact: There are different types of BMX bikes. BMX racing bikes are lightweight and only have back brakes. BMX freestyle bikes are slightly heavier and have both front and back brakes.

Sometimes a line of braille may have more than one number 13. Move your fingers lightly across the lines of braille, find all of the number 13s, and continue to make your favorite bicycle sound each time you find the number.



Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 13 at the following places:

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

Line 2: at the end of the line

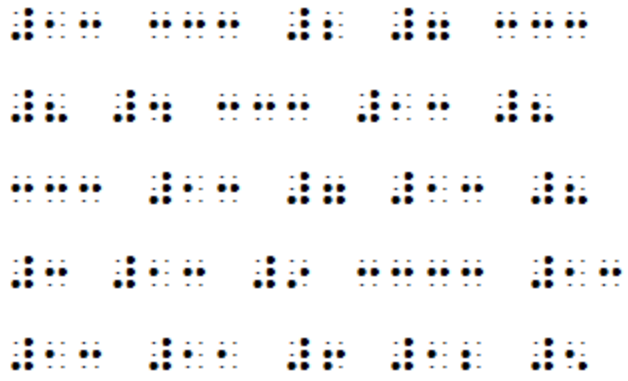
Line 3: toward the middle of the line and at the end of the line

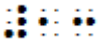
Line 4: toward the middle of the line and at the end of the line

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

Let's find more number 13s. Say "pedal faster" when you find the number 13 in each line. Be careful to make sure it is a number 13 and not another number.

Note: *If you would prefer, the student can stomp a foot whenever he/she finds a number 13. 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 number 13 instead of saying "pedal faster" or stomping a foot. If you would prefer, the student can also place a small sticker on top of each number 13.*



Answer: 

The student should point to a number 13 and say “pedal faster” at the following places:

Line 1: at the beginning of the line

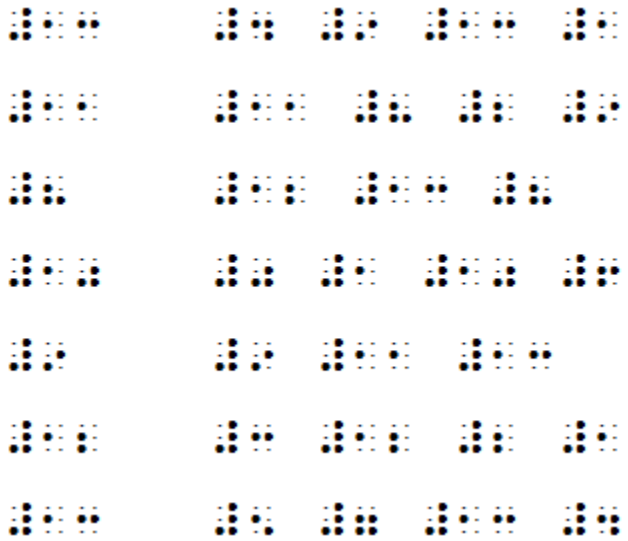
Line 2: toward the end of the line

Line 3: slightly before 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

Now read the number at the beginning of each line and then find its match on the line of braille. Say “pedal up the hill” when you find the match!



Answer:

The student will read the number at the beginning of each line, find its match, and say “pedal up the hill” when he/she finds the match.

Line 1: 13 (3rd on answer choices)

Line 2: 11 (1st item on answer choices)

Line 3: 8 (last item on answer choices)

Line 4: 10 (3rd item on answer choices)

Line 5: 9 (1st item on answer choices)

Line 6: 12 (2nd item on answer choices)

Line 7: 13 (3rd item on answer choices)

Activity time: Use your flash cards to practice reading the numbers 0-13. 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!

Fun fact: BMX bikes have less space between the tires to make it easier to do tricks.

Different type of blocks can be used to build numbers in mathematics. For the third leg of the bicycle trip, we will use blocks called base ten blocks (or Digi-Blocks) to help us build the numbers 11, 12, and 13.

Note: *Place the units and rods in different containers, baskets or bowls. If preferred, Digi-Blocks (a different type of base ten blocks that nest) can be used.*

Use your hands to explore the blocks in the two baskets.

The small blocks are called units, and the long, narrow blocks are called rods.

Now take some time and build with the blocks.

What did you notice about the units? What did you notice about the rods? Yes, the units are smaller, and the rods are longer. The unit blocks are in the shape of a cube.

The rods contain ridges. Let’s count how many squares are on each rod. That’s right. There are ten squares on each rod. It takes ten little cubes or units to make a long one.

Note: *Show the place value chart (available in contracted and uncontracted braille within the curriculum) to the student.*

Sometimes when we use base ten blocks, we also use a place value chart. Use your hands to explore the place value chart. Now let's find the title and read it together. Where will we find the title?

That's right, BMX racer! The title will be at the top of the page. The title is Place Value Chart.

Notice that there is a line going down the middle of the page. Find the column headings toward the top of the page, and I will help you read them. The column on the right is the ones, and the column on the left is tens.

Note: *A two-compartment sorting tray may be used as the place value chart. Label the right compartment "ones" and the left compartment "tens" in braille. The sorting tray may assist students in easily keeping their unit blocks and rods in the correct columns.*

Each unit block represents one, and each rod represents ten. We place rods in the tens column and the unit blocks in the ones column.

Begin by placing and counting units, one at a time, in the ones column on the chart. Let's count to 10.

Now match your 10 units to 1 rod. You can trade those units for the rod. Where do we place the rod? That's right! You place the rod in the tens column.

Note: *If needed, model placing the rods in the tens column and the unit blocks in the ones column using hand-under-hand technique.*

Let's work together to use the base ten blocks and place value chart to represent 11.

There are two ways that we can build eleven. Think about how we can use the unit blocks and rods to represent the number 11. You are right. One way is to count out 11 unit blocks. Another way is to exchange 10 of the unit blocks for a rod. Then we would need one rod and one unit block to represent 11.

Note: *Depending on the child's response, the following questions may be needed. Can you represent 11 using unit blocks? If so, how many unit blocks do you need? If not, why not? That's right. You need 11 unit blocks. As you count the unit blocks, place them in the ones column on your place value*

chart. Can you represent 11 using a rod and unit blocks? If so, how many of each kind do you need? If not, why not?

Great work, math superstar! Let's work together to use the base ten blocks and place value chart to represent 12. Show me two different ways to represent the number 12. Don't forget to use your place value chart!

Note: *Depending on the child's response, the following questions may be needed. Can you represent 12 using unit blocks only? If so, how many? If not, why not? If yes, where would you place the unit blocks on the place value chart? Can you represent 12 using only one kind of block? If so, which one could you use to represent 12? If not, why not? If yes, where would you place the blocks on the place value chart?*

Let's try one more. Let's work together to use the base ten blocks and place value chart to represent 13. Show me two different ways to represent the number 13. Don't forget to use your place value chart!

Note: *Depending on the child's response, additional follow-up questions may be needed.*

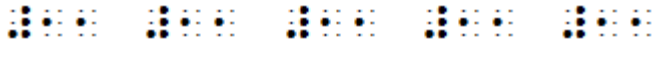
Fun fact: Safety gear such as a helmet, gloves, elbow pads, knee pads, and closed-toe shoes is important when you are racing and doing tricks on BMX bikes.

On the fourth leg of the trip, let's have fun with writing numbers on the braillewriter!

What do numbers begin with? Yes, numbers begin with a numeric indicator. Tell me which dots make the numeric indicator. That's right! Dots 3-4-5-6 make the numeric indicator. Use your ring finger on your left hand and all three fingers on your right hand to write the numeric indicator.

It will take us three braille cells to write the number 11. Begin with a numeric indicator in the first braille cell. Next, in the second braille cell, use your middle finger on your left hand and press the dot 2. To finish the number 11 in the third cell, use your middle finger on your left hand and press the dot 2 again.

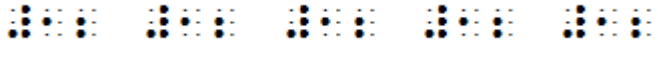
On your mark, get set, go! Practice writing the number 11 now in the air and then on the Accessible Equation Editor and/or your braillewriter. Space one time between your numbers. When you finish writing your numbers several times, move your fingers across the braille and check your work!

Answer:  (The directions are to write the number 11 several times, so there may be variation in how many times 11 is written. Any length of line is considered correct.)

It's time to move to the number 12. Similar to the number 11, it begins with a numeric indicator. Next, in the second braille cell, use your middle finger on your left hand and press the dot 2. To finish the number 12 in the third cell, use your middle and ring fingers on your left hand and press the dots 2-3.

Note: If needed, remind the student that dots 3-4-5-6 make the numeric indicator.

Practice writing the number 12 now in the air and then on the Accessible Equation Editor and/or your braillewriter. Space one time between your numbers. When you finish writing your numbers several times, move your fingers across the braille and check your work!

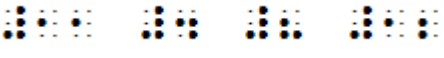
Answer:  (The directions are to write the number 12 several times, so there may be variation in how many times 12 is written. Any length of line is considered correct.)

Fun fact: Wearing long-sleeve shirts and long pants protects your skin from cuts and scrapes if you fall when racing a BMX bike.

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

Note: *An answer key in braille is provided on page 1 of the document entitled "B3 Module 2_Answer Key for Writing Activities_K".*

11 4 8 12

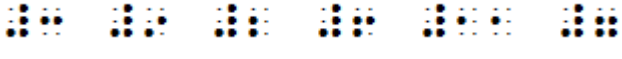
Answer: 

Now move your fingers across the braille and check your work as I say the numbers again.

11 4 8 12

Press your line spacing key twice to move to the next line.

3 9 2 6 11 7

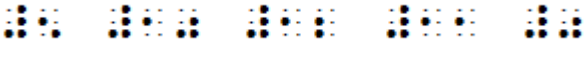
Answer: 

Now move your fingers across the braille and check your work as I say the numbers again.

3 9 2 6 11 7

Press your line spacing key twice to move to the next line.

5 10 12 11 0

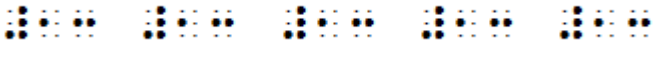
Answer: 

Now move your fingers across the braille and check your work as I say the numbers again.

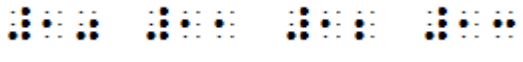
5 10 12 11 0

Let's learn to write the number 13. It begins with a numeric indicator. Next, in the second braille cell, use your middle finger on your left hand and press the dot 2. To finish the number 13 in the third cell, use your middle fingers on both of your hands and press the dots 2-5.

Practice writing the number 13 now in the air and then on the Accessible Equation Editor and/or your braillewriter. Space one time between your numbers. When you finish writing your numbers several times, move your fingers across the braille and check your work!

Answer:  (The directions are to write the number 13 several times, so there may be variation in how many times 13 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. Write the numbers from 10 to 13. Space one time between the numbers.

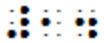
Answer: 

Do you think you can write the numbers from 10 to 13 even quicker? If so, try one more time! You can do it!

Answer: 

Note: *An answer key in braille is provided on page 1 of the document entitled "B3 Module 2_Answer Key for Writing Activities_K".*

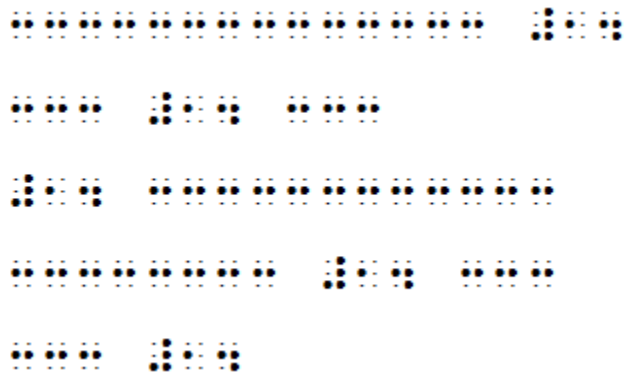
That was excellent work, cyclist! On the fifth leg of the trip, let's learn about the numbers 14 and 15.

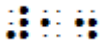


Notice that the number 14 is also three braille cells in length. What is in the first braille cell? That's right! The number 14 begins with the numeric indicator in the first braille cell. What is in the second braille cell? You got it, bike messenger! The digit 1 is in the second cell. What is in the last braille cell? That's right! The digit 4 is in the last cell.

Now it is your turn to find the number 14 in each line of braille. Move your fingers lightly across the line of braille and make your favorite bicycle sound when you find the number 14!

Note: *If you are using hard copy braille, the student can underline or circle the number 14 instead of making his/her favorite bicycle sound. If you would prefer, the student can also place a small sticker on top of each number 14.*



Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 14 at the following places:

Line 1: at the end of the line

Line 2: in the middle of the line

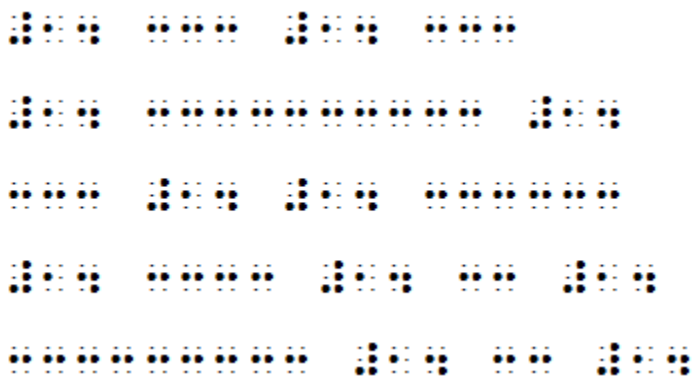
Line 3: at the beginning of the line

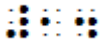
Line 4: toward the end of the line

Line 5: at the end of the line

Way to find the number 14s, math champion! Move your fingers lightly across the lines of braille, find all of the number 14s, and continue to make your favorite bicycle sound each time you find the number. This time there

may be more than one number 14 in a line. Remember to use a light touch and keep your fingers slightly curved.



Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 14 at the following places:

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

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

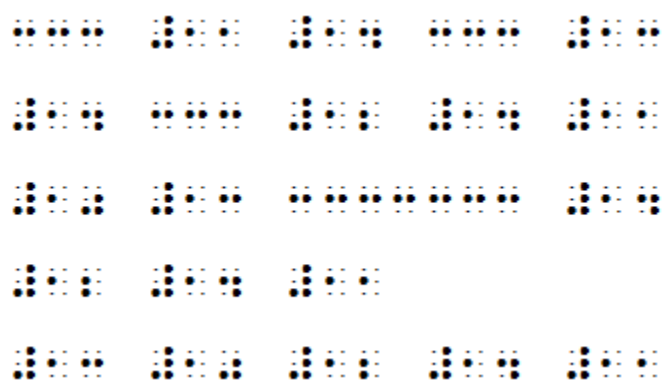
Line 3: twice toward the middle of the line

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 middle of the line and at the end of the line

Fun fact: Mountain biking is a sport where people ride bikes up and down mountains on forest trails.

Let's find more number 14s. Say "mountain biking" when you find the number 14 in each line. Be careful to make sure it is a number 14 and not a number 10, 11, 12, or 13.



Answer: ⠼⠁⠙

The student should point to a number 14 and say “mountain biking” at the following places:

Line 1: in the middle of the line

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

Line 3: at the end of the line

Line 4: in the middle of the line

Line 5: toward the end of the line

Activity time: Use your flash cards and find all of the number 14s. Place all the 14s in one stack and all of the other numbers in a different stack.

Do you think you can find all the number 14s even quicker? Shuffle the flash cards and try one more time! Good luck, Nemeth superstar!

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

That was super reading! Let’s practice reading some more numbers from 0-14. There will be 3 numbers on each line.

⠼⠊ ⠼⠁⠙ ⠼⠋

⠼⠁⠑ ⠼⠃⠙ ⠼⠉⠙

⠼⠃⠑ ⠼⠉⠓ ⠼⠁⠚

⠼⠁⠙ ⠼⠃⠓ ⠼⠁⠑

⠼⠁⠑ ⠼⠁⠙⠙ ⠼⠁⠑⠙

⠼⠃⠃ ⠼⠉⠃ ⠼⠁⠚⠙

⠼⠃⠓ ⠼⠉⠊ ⠼⠁⠚⠋

Answer:

9 14 6

12 3 4

2 7 10

14 0 11

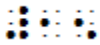
1 13 14

2 5 13

8 9 14

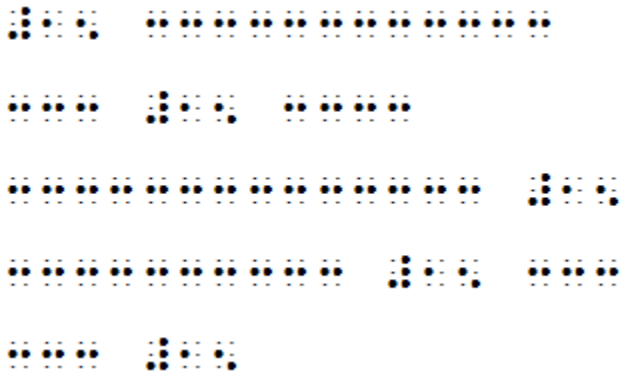
Fun fact: There are mountain bike trails all over the world. The longest mountain bicycle trail is 2,485 miles. It begins in Canada and ends in New Mexico.

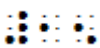
Ding, ding, ding goes the bicycle bell! Time to learn about the number 15!



Notice that the number 15 is also three braille cells in length. What is in the first braille cell? That's right! The number 15 begins with the numeric indicator in the first braille cell like all of the other numbers we have learned about. What is in the second braille cell? You got it, BMX racer! There is a digit 1 in the second cell. What is in the last braille cell? That's right! The digit 5 is in the last cell.

Now it is your turn to find the number 15 in each line of braille. Move your fingers lightly across the line of braille and make your favorite bicycle sound when you find the number 15!



Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 15 at the following places:

Line 1: at the beginning of the line

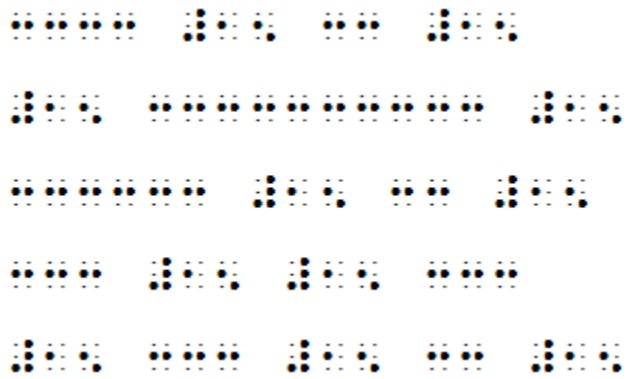
Line 2: toward the middle of the line

Line 3: at the end of the line

Line 4: toward the end of the line

Line 5: at the end of the line

Sometimes a line of braille may have more than one number 15. Move your fingers lightly across the lines of braille, find all of the number 15s, and continue to make your favorite bicycle sound each time you find the number. You can do it, BMX racer!



Answer: 

The student will make his/her favorite bicycle sound each time he/she points to a number 15 at the following places:

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

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

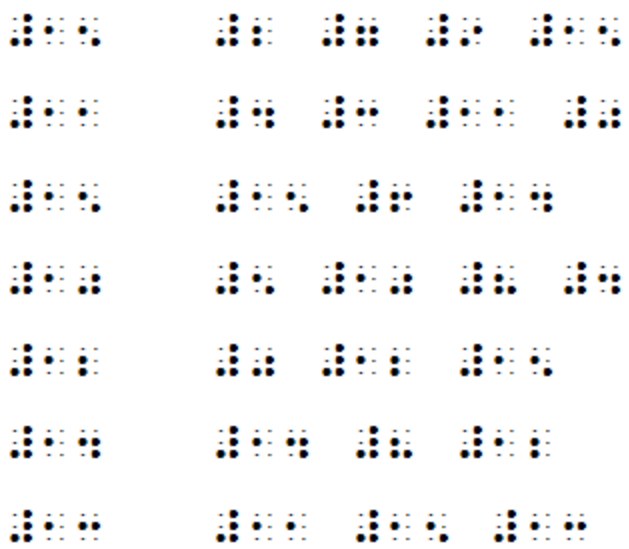
Line 3: toward the middle of the line and at the end of the line

Line 4: twice 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

Read the number at the beginning of each line and then find its match on the line of braille. Say “pedal faster” when you find the match!

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



Answer:

The student will read the number at the beginning of each line, find its match, and say “pedal faster” when he/she finds the match.

Line 1: 15 (last item on answer choices)

Line 2: 11 (3rd item on answer choices)

Line 3: 15 (1st item on answer choices)

Line 4: 10 (2nd item on answer choices)

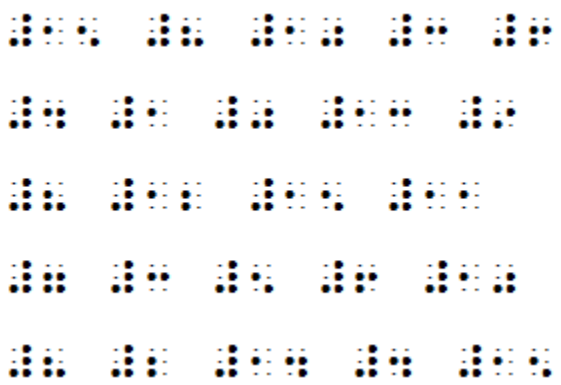
Line 5: 12 (2nd item on answer choices)

Line 6: 14 (1st item on answer choices)

Line 7: 13 (last item on answer choices)

Fun fact: Mountain bicycling has been an Olympic sport since 1996.

Now read numbers ranging from 0-15. Good luck, cyclist!



Answer:

15 8 10 3 6

4 1 0 13 9

8 12 15 11

7 3 5 6 10

8 2 14 4 15

Activity time: Use your flash cards to practice reading the numbers 0-15. 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!

Great work, math superstar! Let's work together to use the base ten blocks and place value chart to build 14. Show me two different ways to represent the number 14. Don't forget to use your place value chart!

Note: *Depending on the child's response, the following questions may be needed. Can you represent 14 using unit blocks only? If so, how many? If not, why not? If yes, where would you place the unit blocks on the place value chart? Can you represent 14 using only one kind of block? If so, which one could you use to represent 14? If not, why not? If yes, where would you place the blocks on the place value chart?*

Let's try one more. Let's work together to use the base ten blocks and place value chart to represent 15. Show me two different ways to represent the number 15. Don't forget to use your place value chart!

Note: *Depending on the child's response, additional follow-up questions may be needed.*

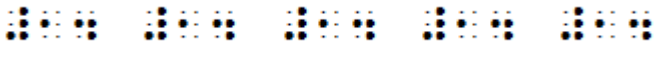
Fun fact: If you are planning a long bicycle ride through the mountains, plan ahead and bring a backpack with food, drinks, a cell phone, and a bike repair kit.

On the sixth leg of the trip, let's have fun with writing numbers 14 and 15 on the braillewriter!

It will take us three braille cells to write the number 14. Begin with a numeric indicator in the first braille cell. Next, in the second braille cell, use your middle finger on your left hand and press the dot 2. The number 14 ends with dots 2-5-6 in the third braille cell. Use the middle finger on your left hand as well as the middle and ring fingers on your right hand.

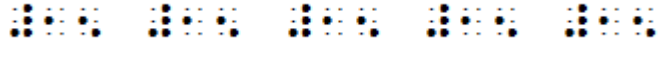
Note: *If needed, remind the student that dots 3-4-5-6 make the numeric indicator.*

On your mark, get set, go! Practice writing the number 14 now in the air and then on the Accessible Equation Editor and/or your braillewriter. Space one time between your numbers. When you finish writing your numbers several times, move your fingers across the braille and check your work!

Answer:  (The directions are to write the number 14 several times, so there may be variation in how many times 14 is written. Any length of line is considered correct.)

The number 15 also begins with a numeric indicator. Next, in the second braille cell, use your middle finger on your left hand and press the dot 2. To finish the number 15 in the third cell, use your middle finger on your left hand and your ring finger on your right hand and press the dots 2-6. You try it now in the air and then on the Accessible Equation Editor and/or your braillewriter.

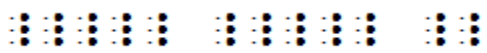
Practice writing the number 15 several times. Space one time between your numbers. When you finish writing the number 5 several times, move your fingers across the braille and check your work!

Answer:  (The directions are to write the number 15 several times, so there may be variation in how many times 15 is written. Any length of line is considered correct.)

That was super writing, math all-star!

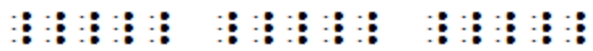
Fun fact: Mountain bikes have front and rear brakes and lots of gears to help you bicycle up steep mountains.

Let's practice counting tally marks together when there are more than 10 tally marks. Notice how there is a group of five tally marks followed by a space. Then there is another group of five tally marks followed by another space. Afterwards there are two more tally marks. Try counting them by yourself now.

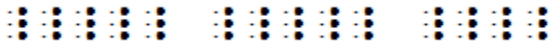


That's right. There are 12 tally marks.

Let's try two more. How many tally marks are on the next line?



That is super work, cyclist! There are 15 tally marks. How many tally marks are on the next line?

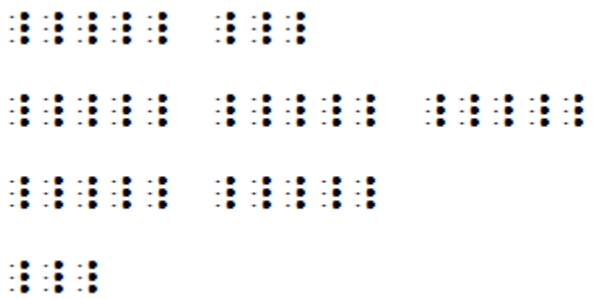


You got it! There are 14 tally marks.

Fun fact: Safety gear such as a helmet, gloves, elbow pads, and knee pads will help keep you safe when you ride a mountain bike. When it is cold or rainy outside, wear a waterproof jacket too.

Activity time: Count the number of tally marks on each line. Then write the number using the Accessible Equation Editor and/or your braillewriter. Space one time between your answers.

Note: *An answer key in braille is provided at the top of page 2 of the document entitled "B3 Module 2_Answer Key for Writing Activities_K".*



Answer:

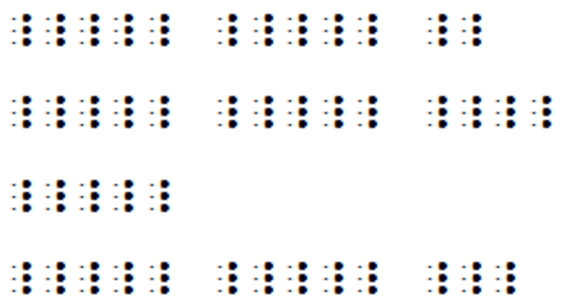
Line 1:  (8)

Line 2:  (15)

Line 3:  (10)

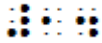
Line 4:  (3)

Let's try some more. Move to the next line on your braillewriter or Accessible Equation Editor.

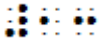


Answer:

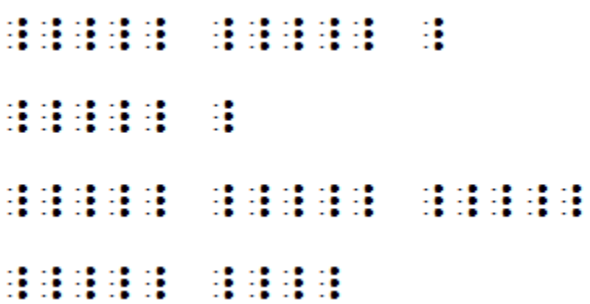
Line 1:  (12)

Line 2:  (14)

Line 3:  (5)

Line 4:  (13)

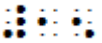
Let's try some more. Move to the next line on your braillewriter or Accessible Equation Editor.



Answer:

Line 1:  (11)

Line 2:  (6)

Line 3:  (15)

Line 4:  (9)

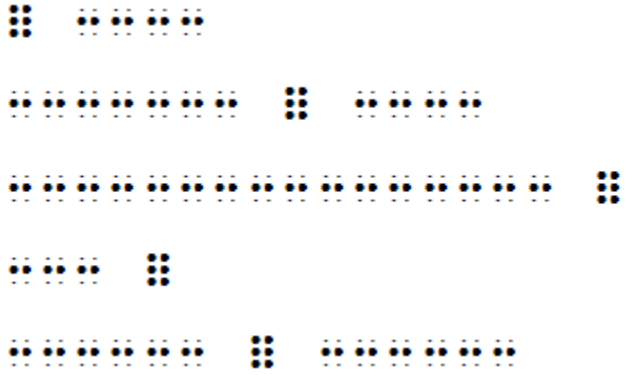
For the last leg of the bicycle cross country trip, let's learn about the general omission symbol. We use this symbol when there is a missing number for you to write in math.

Softly guide your fingers across the line of braille. In the middle of the line, you will find a general omission symbol. There is a line of dots 2-5 before and after the general omission symbol.

Great work, cyclist! Did you notice that the general omission symbol is a full braille cell with the dots 1-2-3-4-5-6?

Note: *It is sometimes incorrectly called a general omission indicator.*

Now it is your turn to find the general omission symbol in each line of braille. Move your fingers lightly across the line of braille and make your favorite bicycle racing sound when you find the general omission symbol!



Answer: 

The student will make his/her favorite bicycle racing sound each time he/she points to a general omission symbol at the following places:

Line 1: at the beginning of the line

Line 2: toward the middle of the line

Line 3: at the end of the line

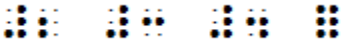
Line 4: at the end of the line

Line 5: in the middle of the line

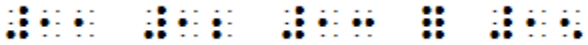
On the next line, you will find a general omission symbol in the middle of the line. It is standing for a missing number in a series of numbers. There is a number 1 before the general omission symbol and a number 3 after it. What is the general omission symbol standing for?

Note: *If needed, provide the student with a hard copy of numbers in order. It may 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 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.*

That's right! The general omission symbol is standing for the number 2. On the next line, you will find another general omission symbol. It is also standing for a missing number in a series of numbers. Read the numbers and try to figure out what number is missing.



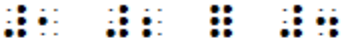
Super work, BMX racer! The missing number is 5. Let's try one more. First, find the general omission symbol, and then tell me the missing number.

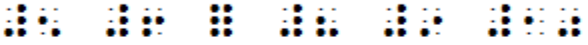


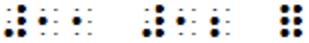
That's right! The missing number is 14.

Activity time: You will need the Accessible Equation Editor and/or your braillewriter and braille paper for this activity. Find the general omission symbol in each line of braille and write the missing number it is standing for. Space one time between the numbers.

Note: *An answer key in braille is provided in the middle of page 2 of the document entitled "B3 Module 2_Answer Key for Writing Activities_K".*





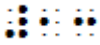


Answer:

Line 1:  (3)

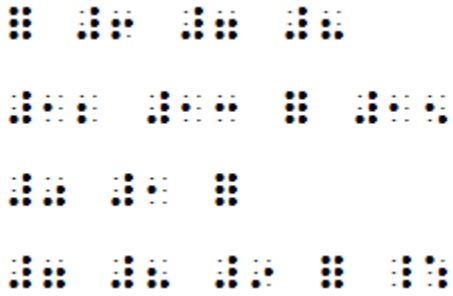
Line 2:  (7)

Line 3:  (4)

Line 4:  (13)

Let's try some more. Be careful when you get to the last line of braille. There is a special symbol after the general omission symbol on that line, and it is called a Nemeth Code terminator. It tells us that we are done reading math or science. Dots 4-5-6 are in the first cell, and dots 1-5-6 are in the second cell.

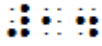
Move to the next line on your braillewriter or Accessible Equation Editor. You can do it, Nemeth superstar!



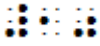
Did you notice this time the Nemeth Code terminator was on the same line with your math problem? Sometimes it will be on a line by itself and sometimes it will be on a line with other braille.

Answer:

Line 1:  (5)

Line 2:  (14)

Line 3:  (2)

Line 4:  (10)

Fun fact: Mountain biking started in the 1970s.

Let's learn how to write a general omission symbol in braille. Place your fingers on the correct keys on either the Accessible Equation Editor or your braillewriter. Then use all three fingers on your left hand and all three fingers on your right hand to write the general omission symbol. Practice writing the general omission symbol several times.

Activity time: You will need the Accessible Equation Editor and/or your braillewriter and braille paper for this activity. Listen and then braille what you hear. Space one time between the braille symbols.

Note: *An answer key in braille is provided at the bottom of page 2 of the document entitled "B3 Module 2_Answer Key for Writing Activities_K".*

11 12 general omission symbol 14 15

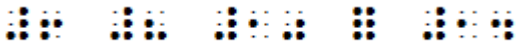
Answer: 

Now move your fingers across the braille and check your work as I say the numbers again.

11 12 general omission symbol 14 15

Press your line spacing key twice to move to the next line.

6 8 10 general omission symbol 14

Answer: 

Now move your fingers across the braille and check your work as I say the numbers again.

6 8 10 general omission symbol 14

That was quick work, cyclist!

Now you are ready for a pit stop: module 2 check-up! Thank you for all of your hard work! You are a Nemeth all-star!

Follow-up activity:

Note: *This activity is an adaptation of a lesson plan entitled "How Many Buttons?" on the Illuminations website sponsored by National Council of Teachers of Mathematics. For more information, visit http://illuminations.nctm.org/Lesson.aspx?id=286.*

You will need a small bag of tactually distinctive buttons (approximately 20-25), two-compartment sorting tray, number flash cards from 5-15, two index cards on which you have brailled "One More" and "One Less", your braillewriter, and braille paper. Before we begin the activity, pick one button from the small bag of buttons and place it in your hand. Tell me about the button (or object).

Keep holding it as we read the story “The Lost Button” from *Frog and Toad Are Friends* by Arnold Lobel.

Note: *If you do not have tactually distinctive buttons, use other small objects that are tactually distinctive such as a paper clip, a coin, a pencil eraser, etc. If you do not have a two-compartment sorting tray, use two small storage boxes.*

Do you think that the button (or object) in your hand could be the lost button? Why or why not?

Now shuffle the flash cards with the numbers 5-15. Draw one flash card and read the number. As you read each number card, use a two-compartment sorting tray to separate which cards you have read and which cards you have not read.

Make a set with that many buttons. It will make it easier to count the buttons if you place them in a line.

Note: *If needed, assist the student in placing the buttons in a row.*

Let’s count the buttons together and see if you are right! Now place the buttons back in the bag and draw another flash card.

Note: *Repeat this process several times or until all of the number flash cards have been drawn. Then review (or teach) the meaning of the phrases “One More” and “One Less” if needed before moving to the next part of the activity.*

Here is a new set of buttons for you to count. Write how many are in the set. Then write how many will be in a set with one more. Then write how many will be in a set with one less.

Let’s preview two new cards. The first card reads “One More” and the other card reads “One Less”. Keep one of the cards and hand me the other one. Which card did you keep?

Shuffle the number flash cards again and then draw a flash card. As you read each number card, use a sorting tray to separate which cards you have read and which cards you have not read. Then write the number that is “One More” (or “One Less” depending on the flash card that the child has).

Note: *Repeat this process several times or until all of the number flash cards have been drawn.*

Let’s trade note cards with the words “One More” and “One Less”. Shuffle the number flash cards again and then draw a flash card. As you read each

number card, use a sorting tray to separate which cards you have read and which cards you have not read. Then write the number that is “One More” (or “One Less” depending on the flash card that the child now has).

Note: *This activity can easily be completed with 2 or 3 students who read print or braille if preferred. If some of the players read print, add print to each of the flash cards and have them write their answers on paper with a pencil.*