

# **Second Grade Module 2 Subtraction to 100 and the Cancellation Indicators Teacher Script Answer Key**

## **Introduction**

- This module should be completed with hard copy braille and a braillewriter instead of a refreshable braille display.
- All bracketed text should not be read aloud and is for reference only.
- The questions and answers have been numbered in this document to aid teachers and parents. However, the questions are not numbered the same way, if numbered at all, in the student documents.
- Throughout the script, it is assumed that the student is correct. The teacher may need to go off script if the student does not answer a question correctly.

## **Section 1 Review Reading Spatial Subtraction Problems**

### **Section 1 Materials**

- Student Braille Document: G2-M2-Student-Materials.brf
- Optional: Unifix cubes, Digi-Blocks, or base ten blocks
- Activity 1
  - Flashcards available in braille within the curriculum
  - Optional: nonslip surface such as rubber shelf liner

### **Section 1 Teacher Note**

If needed, point out that braille page numbers are placed at the right margin on the last line. Also point out that braille page numbers are transcribed in Unified English Braille, not the Nemeth braille code.

### **Section 1 Teacher Script**

It's time to prepare for a ride in a bus! Before we begin our journey, locate the title at the top of the page and read the title to me.

Yes, it says Second Grade Module 2 Subtraction to 100 and the Cancellation Indicators.

Move your hands down to the next line of braille. It begins in cell 5, and it says Section 1. Afterwards, there is a two-cell symbol.

[dots 4-5-6, dots 1-4-6]



What is this symbol called and what is its purpose?

You got it! It is called an opening Nemeth Code indicator, and it tells us that we are going to read math or science.

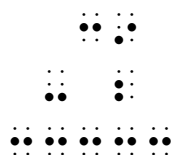
### Fun Fact 1

The largest bus in the world holds 300 passengers.

For the first part of our adventure, let's review how to read subtraction problems that are vertically aligned. This format is very helpful when we calculate or compute the answer!

Directly below the section name, there is a problem for you to explore with your hands. The minuend is written directly above the subtrahend in the equation.

[Make sure the student is viewing the first problem on page 1 which is 39 minus 2 equals.]



Math problems are considered to be in spatial format when the numbers are vertically aligned. When we read and write subtraction problems and equations in vertical alignment, we do not use numeric indicators.

The problem begins with what number in the first line?

That's right. It begins with the number 39. Now move your hands down to the next line. You will find a minus sign. Which dots make the minus sign?

You got it! Dots 3-6 make the minus sign. Notice that there is not a numeric indicator after the minus sign.

The minus sign is always spaced one cell to the left of the widest number in the spatially aligned subtraction problem. Since the minuend on the first line contains two digits in this problem and the subtrahend on the second line contains only one digit, there is a space between the minus sign and the subtrahend.

After the minus sign, there are the dots 2-3. What number is made with dots 2-3? Yes, the number 2 is made with dots 2-3.

So far our problem reads 39 minus 2. On the third line, there is a line of dots 2-5. Do you remember what this is called in Nemeth? That is correct. We call this a separation line. It begins one cell to the left of the minus sign and continues to the right one cell beyond the numbers.

So our problem reads thirty-nine minus two equals.

There are different strategies that we can use when subtracting if we do not know the answer immediately. An effective strategy for this problem would be to count back. With this strategy, you begin with the minuend and count back from that number. So this time let's begin with 39 and count back two.

39, 38, 37

So what does 39-2 equal? Yes, 39-2 equals 37.

Read the last two vertically aligned subtraction problems on page 1 and then use the count back strategy to determine the difference.

[75 minus 4 equals and 48 minus 3 equals]

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  ⠠⠠⠠⠠⠠⠠⠠⠠

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Yes, that's right. The first problem is 75-4. Now use the count back strategy and then tell me what 75-4 equals. Yes, seventy-five minus four equals seventy-one!

Now it is time to read the next problem. Yes, this problem is 48-3. Use the count back strategy to determine what 48-3 equals. You got it! Forty-eight minus three equals forty-five.

Below the last problem, there is a Nemeth Code terminator.

[dots 4-5-6, dots 1-5-6]



Locate the braille page number at the bottom of the page. What page are we reading?

Yes, we are reading page 1.

## **Fun Fact 2**

The first horse-drawn bus was introduced in Paris by Blaise Pascal more than 350 years ago.

## **Activity 1**

Let's use flashcards to practice reading problems in vertical alignment and use the count back method to find the difference. Read each problem and then tell me the answer before moving to the next flashcard.

Good work, Nemeth superstar! We need to walk down the street on the sidewalk to the bus stop because the bus will be arriving soon!

# **Section 2 Subtracting Multiples of 10**

## **Section 2 Materials**

- Counting to 120 Chart available in braille within the curriculum (Although the single-spaced chart is recommended for most second graders, a double-spaced alternative chart is also available in the curriculum.)
- Student Braille Document: G2-M2-Student-Materials.brf
- Braillewriter
- Optional: G2-M2-Writing-Answers.brf
- Activity 2: same as materials used in the rest of Section 2

## Section 2 Teacher Notes

- For counting by 10s, beginning with a number, have the student keep their place on the beginning number with their left hand and move their right hand to the next row. As needed, have the student move their hands from left to right and count to 10 with you each time. Make sure they notice that their right hand ends up directly below where they started. Don't give this away, but try to help them discover the pattern.
- Give the student time to discover this pattern on their own.
- If needed, skip count backwards by 10s, beginning with 120, several times.
- For counting backwards by 10s, beginning with a number, have the student keep their place on the beginning number with their left hand and move their right hand to the previous row as they count. As needed, have the student count to 10 with you each time. Make sure they notice that their right hand ends up directly above where they started. Don't give this away, but try to help them discover the pattern.
- When writing the answers to problems, provide assistance as needed. Also remind the student to move their fingers across the braille and check their work if needed.
- Activity 2
  - Provide assistance as needed.
  - Remind the student to move their fingers across the braille and check their work if needed.

## Section 2 Teacher Script

For the second part of the adventure, let's use what we know about skip counting and the Counting to 120 Chart to subtract within 100. Before we begin, let's practice skip counting by 10s to 120 together.

10 20 30 40 50 60 70 80 90 100 110 120

Now let's use our Counting to 120 Chart as we skip count by 10s.

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

What do you think will happen if I change the starting number to 3?

Will the pattern for skip counting by 10s remain the same or will it change?

Will all of the numbers be in the same column? How do you know?

Let's skip count by 10s beginning with 3, using our chart, and find out.

3 13 23 33 43 53 63 73 83 93 103 113

Notice how all of the numbers for skip counting by 10s beginning with 3 are in the same column again. The last digit for all of the numbers is 3.

We can also skip count backwards! Help me count backwards from 120 to 10 by 10s. Ready, set, go!

120 110 100 90 80 70 60 50 40 30 20 10

Now let's use our Counting to 120 Chart as we skip count backwards by 10s.

120 110 100 90 80 70 60 50 40 30 20 10

Let's use our chart and skip count backwards by 10s beginning with 85.

85 75 65 55 45 35 25 15 5

Notice how all of the numbers for skip counting backwards from 85 by 10s are in the same column too. The last digit for all of the numbers is 5.

Let's try one more together. Skip count backwards by 10s beginning with 117, using our chart.

117 107 97 87 77 67 57 47 37 27 17 7

### **Fun Fact 3**

Buses are an important part of public transportation all over the world. Many people who do not own cars, use buses to get around. Buses make it easy for people to get to where they want to go.

Now turn to page 2 in your braille document and locate the first subtraction problem. Then read the problem to me.

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⠠⠠⠠⠠⠠⠠  
⠠⠠⠠⠠⠠⠠

Yes, the problem is 37-20. We can determine the difference by locating 37 on the Counting to 120 Chart and then skip counting backwards by 10s using our column pattern. Remember 20 is two 10s.

37 27 17

That is correct! The difference is 17. Now read the second problem on page 2.

$$\begin{array}{r} 61 \\ - 30 \\ \hline \end{array}$$

You got it! The problem is 61-30. Let's use your Counting to 120 Chart and then skip count backwards by 10s. Remember 30 is three 10s.

61 51 41 31

Yes, the answer is 31. Read the next two vertically aligned subtraction problems and then use what you know about skip counting backwards and the Counting to 120 Chart to determine the difference.

[85 minus 10 equals and 98 minus 40 equals]

$$\begin{array}{r} 85 \\ - 10 \\ \hline \end{array}$$

$$\begin{array}{r} 98 \\ - 40 \\ \hline \end{array}$$

Yes, that's right. The first of these two problems is 85-10. What is the difference?

That's correct. The difference is 75. Now it is time to read the next problem.

Yes, the second problem is 98-40. Use your Counting to 120 Chart and tell me the difference.

Outstanding! Ninety-eight minus forty equals fifty-eight.

## Practice 2.1

We have three more problems at the bottom of page 2. This time, the problems are side-by-side.

[33 minus 10 equals, 70 minus 40 equals, and 52 minus 30 equals]

⠠⠨⠠⠨	⠠⠠⠠⠠	⠠⠠⠠
⠠⠠⠠⠠	⠠⠠⠠⠠	⠠⠠⠠⠠
⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠⠠⠠	⠠⠠⠠⠠⠠⠠

We are going to read each problem, determine the difference, and write the answer before moving to the next problem. Please follow these specific instructions:

Begin by placing page 2 in the braillewriter, and then roll the paper into the braillewriter by using the knobs on either side of the braillewriter. The paper should stop automatically.

We will write the answer to each subtraction problem on the line that is below the separation line. So, use your line spacing key and find the row of problems toward the bottom of the page. Now press the line spacing key until the embossing head is on the line below the separation line.

Then we will use the space bar to line up the embossing head so that we can write the difference directly under the subtrahend. You can see once again how vertical aligned problems make it easier to calculate or compute the answer!

Now read the first problem.

You got it! The problem is 33-10. Use your chart and tell me the difference.

Yes, the sum of 33-10 equals 23. Now write your answer!

Excellent work! Now read the second problem.

That's correct. The second problem is 70-40. What is the difference?

You are on a roll! The difference is 30. Write your answer!

Just one more problem to complete before activity time! Begin by reading the third problem and then tell me the difference.

Yes, the problem would be read as 52-30, and the difference is 22. Write your answer! You may now remove your paper from the braillewriter.



## Answer 2.1

The student should read 33 minus 10 equals 23, 70 minus 40 equals 30, and 52 minus 30 equals 22. The student should also write each answer under the appropriate spatial problem. The student can check their answers for Section 2 using pages 1-2 of the writing answers document.

$\begin{array}{r} 33 \\ -10 \\ \hline \end{array}$	$\begin{array}{r} 70 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 52 \\ -30 \\ \hline \end{array}$
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## Fun Fact 4

The word bus comes from the Latin word "omnibus". It means "for everyone".

## Activity 2

### Practice 2.2

You are going to place page 3 and then page 4 into your braillewriter, silently read each of the subtraction problems, use one of the strategies we have learned to determine the difference, and write the answer before moving to the next problem.

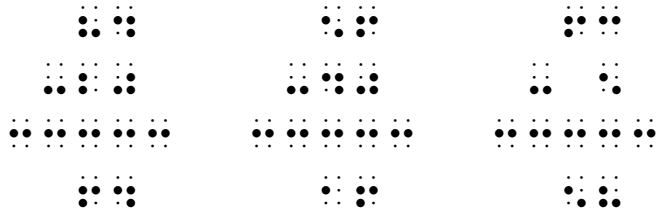
Some problems can be more easily answered using the count back strategy, and others can be more easily completed by using the Counting to 120 Chart. You can do it, Nemeth superstar!

[Make sure the student is viewing the first row of problems on page 3.]

$\begin{array}{r} 84 \\ -20 \\ \hline \end{array}$	$\begin{array}{r} 56 \\ -40 \\ \hline \end{array}$	$\begin{array}{r} 63 \\ -5 \\ \hline \end{array}$
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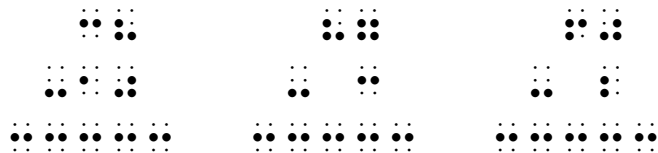
## Answer 2.2

The student should read 84 minus 20 equals 64, 56 minus 40 equals 16, and 63 minus 5 equals 58. The student should also write each answer under the appropriate spatial problem.



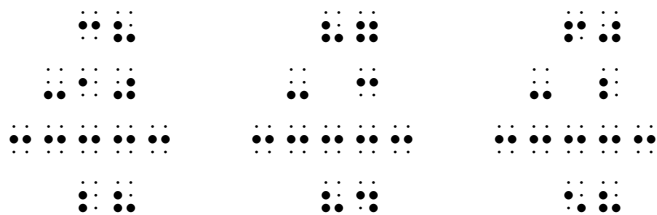
### Practice 2.3

[Make sure the student is viewing the second row of problems on page 3.]



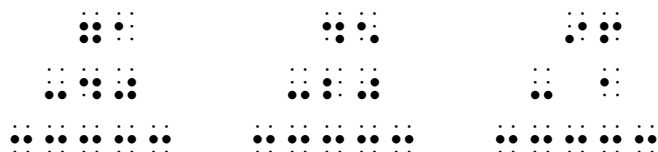
### Answer 2.3

The student should write 38 minus 10 equals 28, 87 minus 3 equals 84, and 60 minus 2 equals 58. The student should also write each answer under the appropriate spatial problem.



### Practice 2.4

[Make sure the student is viewing the third row of problems on page 3.]



### Answer 2.4

The student should write 71 minus 40 equals 31, 45 minus 20 equals 25, and 96 minus 1 equals 95. The student should also write each answer under the appropriate spatial problem.

$$\begin{array}{r} 25 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 38 \\ - 30 \\ \hline \end{array} \quad \begin{array}{r} 19 \\ - 3 \\ \hline \end{array}$$

## Practice 2.5

[Make sure the student is viewing the last row of problems on page 3.]

$$\begin{array}{r} 25 \\ - 4 \\ \hline \end{array} \quad \begin{array}{r} 38 \\ - 30 \\ \hline \end{array} \quad \begin{array}{r} 19 \\ - 3 \\ \hline \end{array}$$

### Answer 2.5

The student should write 25 minus 4 equals 21, 38 minus 30 equals 8, and 19 minus 3 equals 16. The student should also write each answer under the appropriate spatial problem.

$$\begin{array}{r} 25 \\ - 4 \\ \hline 21 \end{array} \quad \begin{array}{r} 38 \\ - 30 \\ \hline 8 \end{array} \quad \begin{array}{r} 19 \\ - 3 \\ \hline 16 \end{array}$$

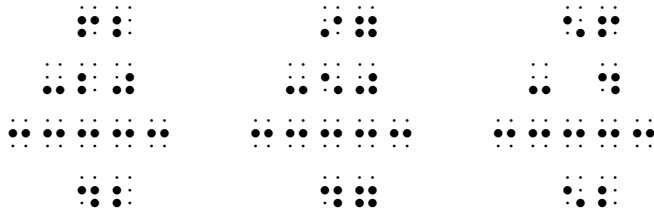
## Practice 2.6

[Make sure the student is viewing the first row of problems on page 4.]

$$\begin{array}{r} 62 \\ - 20 \\ \hline \end{array} \quad \begin{array}{r} 97 \\ - 50 \\ \hline \end{array} \quad \begin{array}{r} 56 \\ - 4 \\ \hline \end{array}$$

### Answer 2.6

The student should write 62 minus 20 equals 42, 97 minus 50 equals 47, and 56 minus 4 equals 52. The student should also write each answer under the appropriate spatial problem.



Since it is almost time for the bus to arrive, listen for the bus to pull up to the bus stop. When it arrives, you will hear the doors open. Then it will be time for us to get on the bus.

It is important that we ask the driver which local bus we are entering since most cities have many buses! This will help us make sure that we get to our destination! Once we have confirmed that we are on the right bus, it will be time to pay the bus fare or show our bus pass to the driver!

## Section 3 Writing Spatial Subtraction Problems

### Section 3 Materials

- Braillewriter
- Braille paper
- Optional: G2-M2-Writing-Answers.brf

### Section 3 Teacher Notes

- It is highly recommended that Section 3 activities be completed using a braillewriter and braille paper since spatially aligned problems require more than one line in braille.
- Repeat saying each problem as many times as needed.
- Remind the student to move their fingers across the braille and check their work if needed.

### Section 3 Teacher Script

For the third part of the journey, let's review how to write spatially aligned subtraction problems.

#### Practice 3.1

We will begin by getting out a new piece of braille paper. Listen carefully as I read the problems and then braille what you hear.

Let's start by writing 75 minus 41 equals.

$$\begin{array}{r} 75 \\ -41 \\ \hline \end{array}$$

In this problem, the minuend in the first line will begin in cell 3 because the minus sign on the second line will begin in cell 2 and the separation line will begin in cell 1 on the third line. Place your fingers on the correct keys on your braillewriter, and let's get started. In order to braille the number 75 beginning in cell 3, press the space bar twice.

Then write the number. We will not need a numeric indicator since the problem is vertically aligned.

Press the line spacing key only once and move to the next line. The number 41 will be brailled directly below the minuend in the first line. The digits should be aligned according to their place value.

Where will we braille the minus sign? Yes, we will place the minus sign one cell to the left of the number 41 on the second line. Use the backspace key to line up the embossing head so that we can write the minus sign one cell to the left of the number 41. Then press the line spacing key once and move to the next line.

Now you are ready to braille the separation line below the minus sign and number 41. How do you braille a separation line? Yes, we press the dots 2-5 five times to make the separation line. It will begin in cell 1 and continue one cell to the right of the numbers.

Answer 3.1

The student should write 75 minus 41 equals. The student can also check their answers for Section 3 using pages 3-4 of the writing answers document.

$$\begin{array}{r} \dots \\ \dots \\ \dots \end{array}$$

Way to go, Nemeth superstar!

### Practice 3.2

Let's write another problem together, but first press your line spacing key three times.

[68 minus 5 equals]

$$\begin{array}{r} 68 \\ - 5 \\ \hline \end{array}$$

What should we braille first? Yes, begin by braille the minuend on the first line. What cell will it begin in?

You got it! The number 68 will begin in the third cell in this problem. Place your fingers on the correct keys on your braillewriter and press the space bar twice so that we can write the number 68, beginning in the third cell.

We will not need a numeric indicator again since the problem is vertically aligned.

What should we do next?

That's correct. We need to press the line spacing key only once to go the next line and braille the minus sign and number 5. Just like in our last problem, the digits should be aligned according to their place value. That means that the number 5 will be placed in the ones column.

Also remember that the minus sign should be one cell to the left of the widest number in the problem. Move your embossing head to where you should braille the minus sign! You got it!

Once you are finished, press the line spacing key only once and move to the next line. Now you are ready to braille the separation line below the minus sign and numbers. How do you braille a separation line? Yes, press the dots 2-5 to make the separation line. It will begin in cell 1 and continue one cell to the right of the numbers.

Answer 3.2

The student should write 68 minus 5 equals.

$$\begin{array}{r} \dots\dots \\ \dots\dots \\ \dots\dots\dots \\ \dots\dots\dots \end{array}$$

## Fun Fact 5

A place on a sidewalk where people wait for a bus is called a bus stop. A building where lots of city buses meet or where people wait for a long-distance bus is called a bus station.

**Practice 3.3**

Try writing a subtraction problem by yourself! Begin by pressing your line spacing key three times. Then write 42 minus 30 equals.

$$\begin{array}{r} 42 \\ - 30 \\ \hline \end{array}$$

Answer 3.3

The student should write 42 minus 30 equals.

$$\begin{array}{r} 42 \\ - 30 \\ \hline \end{array}$$

Very nice!

**Practice 3.4**

Now it is time for you to write more subtraction problems! After you write each problem, press your line spacing key three times. You may need another piece of braille paper.

Write the following problems: 53 minus 6 equals, 68 minus 20 equals, 17 minus 4 equals, 88 minus 1 equals, 46 minus 30 equals, and 71 minus 40 equals.

$$\begin{array}{r} 53 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 68 \\ - 20 \\ \hline \end{array}$$

$$\begin{array}{r} 17 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 88 \\ - 1 \\ \hline \end{array}$$

$$\begin{array}{r} 46 \\ - 30 \\ \hline \end{array}$$

$$\begin{array}{r} 71 \\ -40 \\ \hline \end{array}$$

Answer 3.4

The student should write 53 minus 6 equals, 68 minus 20 equals, 17 minus 4 equals, 88 minus 1 equals, 46 minus 30 equals, and 71 minus 40 equals.

$$\begin{array}{r} 53 \\ -6 \\ \hline \end{array}$$

$$\begin{array}{r} 68 \\ -20 \\ \hline \end{array}$$

$$\begin{array}{r} 17 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 88 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 46 \\ -30 \\ \hline \end{array}$$

$$\begin{array}{r} 71 \\ -40 \\ \hline \end{array}$$



## Fun Fact 6

After more than a 100 year break, the horse drawn bus appeared again in 1812.

# Section 4 The Cancellation Indicators

## Section 4 Materials

Student Braille Document: G2-M2-Student-Materials.brf

## Section 4 Teacher Script

The next bus stop is Main Street! For the fourth part of the adventure, let's learn about the cancellation indicators.

Sometimes in print, one or more numbers are crossed out or "cancelled". In braille, the crossed out number(s) are enclosed in cancellation/regrouping indicators.

Confirm that you are on braille page 4 and then scan the page for the section name. It begins in cell 5, and it says Section 4. It is followed by an opening Nemeth Code indicator.

[dots 4-5-6, dots 1-4-6]

⠠⠠⠠

Now softly guide your fingers across the next line of braille. In the middle of the line, you will find the Nemeth symbol for the opening cancellation indicator. There is a line of dots 2-5 before and after the opening cancellation indicator.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

## Practice 4.1

It is your turn to find the opening cancellation indicator in each line of braille. Move your fingers lightly across the line of braille and say "opening cancellation indicator" when you locate the indicator!

[Five lines of dots 2-5 in the middle of page 4 with an opening cancellation indicator inserted in each line.]

Answer 4.1

The student will say “opening cancellation indicator” each time they point to an opening cancellation indicator 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: toward the end of the line

Great work, Nemeth superstar! In the middle of the next line of braille, you will find the Nemeth symbol for the closing cancellation indicator. There is a line of dots 2-5 before and after the opening cancellation indicator.

## Practice 4.2

Now find the closing cancellation indicator in each line of braille. Move your fingers lightly across the line of braille and say "closing cancellation indicator" when you locate the indicator!

[Five lines of dots 2-5 at the bottom of page 4 with a closing cancellation indicator inserted in each line.]

### Answer 4.2

• •  
• •  
• •

The student will say “closing cancellation indicator” each time they point to a closing cancellation indicator 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: toward the end of the line

Line 5: at the end of the line

Excellent reading! We use these new Nemeth symbols when a number is crossed out or cancelled. Turn to page 5 and guide your fingers across the first line of braille as I read an example aloud.

~~8~~

It begins with an opening cancellation indicator, followed by the number 8. It ends with a closing cancellation indicator. This could also be read as a cancelled 8 or perhaps as a crossed out 8.

Now you try reading the next number, character by character.

[Make sure the student is viewing the second line of braille on page 5.]

2

Yes, that's right. It begins with an opening cancellation indicator, followed by the number 2. It ends with a closing cancellation indicator.

Did you notice that a Nemeth Code terminator followed the last number?

### **Fun Fact 7**

In the 1830s, steam-engine powered buses and electric trolley buses began to operate.

## **Section 5 Cancellation Indicators in Spatial Subtraction Problems**

### **Section 5 Materials**

- Base ten units and rods in different containers, baskets, or bowls (Alternative: Digi-Blocks which is a different type of base ten blocks that nest)
- Counting to 120 Chart available in the curriculum
- Student Braille Document: G2-M2-Student-Materials.brf
- Braillewriter
- Optional: braille paper, G2-M2-Writing-Answers.brf, Place Value Chart 1 available in contracted and uncontracted braille within the curriculum
- Activity 3
  - Student Braille Document: G2-M2-Student-Materials.brf
  - Braillewriter
  - Braille paper
  - Optional: G2-M2-Writing-Answers.brf

### **Section 5 Teacher Notes**

- Although students are introduced to reading the opening and closing cancellation indicators in this lesson, they are not introduced to writing these symbols. Students who read braille should be able to read subtraction problems with these indicators, but they are not usually expected to rewrite and compute subtraction problems using these indicators since this would be more complex on a braillewriter. Instead, students may use an abacus, especially since using an abacus is more time efficient and will reinforce place value.
- If preferred, students can write the answers to the problems on another sheet of braille paper.
- When solving problems, offer assistance as needed if the student has difficulty explaining the process or determining the difference.

- Activity 3
  - Offer assistance as needed.
  - If preferred, there is adequate space in the braille document for students to write their answer below the separation line in each problem and the answer key is provided in this format.

## **Section 5 Teacher Script**

Cancellation indicators are sometimes used in vertically arranged subtraction problems, especially in example problems in math textbooks and worksheets.

Let's use base ten blocks to solve a problem together and then we will learn how to read the problem that includes cancellation indicators in Nemeth Code.

The problem is  $42-5$ .

Begin by building the number 42. Do we have enough ones to subtract 5? How do you know?

No, we do not have enough ones. 5 ones is more than 2 ones.

We can exchange a tens rod for 10 ones. This is called regrouping. We are regrouping 1 ten as 10 ones.

How many tens rods and one blocks do you have now?

Yes, you have 3 tens rods and 12 ones. Now we can subtract 5.

How many blocks do you have after subtracting 5?

Yes, you have 3 tens rods and 7 one blocks left, so  $42-5$  equals what number?

Excellent work! Forty-one minus five equals thirty-seven.

### **Practice 5.1**

Now let's explore the same problem in Nemeth Code. It is the first problem after the section name on page 5.

[42 minus 5 equals written with cancellation indicators and renamed numbers]

$$\begin{array}{r} 23 \\ 42 \\ - 5 \\ \hline \end{array}$$

The problem contains 4 lines in braille. The top line of the problem contains the renamed numbers. When we realized that there was not enough ones to subtract 5 from 2, we exchanged a tens rod for 10 unit blocks. Then we had 3 tens rods and 12 ones blocks. These are the numbers written in the first line of the problem.

The second line contains the minuend of 42. When cancellation is needed in a subtraction problem, we align the numbers to help us compute the answer.

Since we exchanged a tens rod, we cancelled the four before writing the number 3 above. So there is an opening cancellation indicator before the number 4 and a closing cancellation indicator after the number.

Since we now have 12 one blocks instead of 2 blocks, we needed to cancel the number 2 in the ones column. There is an opening cancellation indicator before the number 2 and a closing cancellation indicator after the number. Notice that there is also a space between the opening cancellation indicator and the number.

Numbers do not appear in the same column as cancellation indicators. Since we need two braille cells to write the number 12 above the number 2, we needed to leave a space between the opening cancellation indicator and the number 2 in the second line of the problem.

The third line of the problem contains the minus sign and the subtrahend of 5. The last line of the problem contains the separation line.

Now put page 5 into your braillewriter and let's work together to write the answer to the problem. Begin by using your line spacing key to move to the line below the separation line. Then align your embossing head directly below the 2 in the ones column. How many ones did we have left after subtracting 5 from 12?

Yes, we had 7 ones. So we need to write 7 in the one column. How many tens rods did we have left?

That's correct! We had 3 tens rods. Align your embossing head directly below the 4 in the tens column and then write 3.

## Answer 5.1

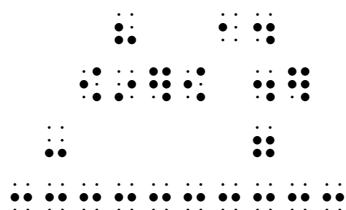
The student should write 37 below the separation line with the 3 directly below the 4 in the tens column and the 7 directly below the 2 in the ones column. The student can also check their answers for Section 5 using pages 5-7 of the writing answers document.

$$\begin{array}{r} 3 \ 12 \\ \cancel{4} \ \cancel{2} \\ - \quad 5 \\ \hline 3 \ 7 \end{array}$$

## Practice 5.2

Move to the second subtraction problem on page 5 and let's solve it together, using our base ten blocks.

[94 minus 7 equals written with cancellation indicators and renamed numbers]



Begin by locating the minuend in the second line of the problem.

Yes, the minuend is 94. What is the subtrahend?

That is correct! It is 7. So the problem is 94-7.

Begin by building the number 94. Do we have enough ones to subtract 7? How do you know?

No, we do not have enough ones. 7 ones is more than 4 ones.

We can exchange a tens rod for 10 ones. This is called regrouping. We are regrouping 1 ten as 10 ones.

When you regroup, where do you write the regrouped numbers before subtracting?

Yes, we write the numbers above the minuend. What number should we write in the tens column and what number should we write in the ones column?

That's right. Yes, the number 8 should be written in the tens column since we now have 8 tens rods. In addition, the number 14 should be written in the ones column since we have 14 ones.

Now we are ready to subtract 7.

How many blocks do you have after subtracting 7?

Yes, you have 8 tens rods and 7 one blocks left, so  $94 - 7$  equals what number?

Excellent work! Ninety-four minus seven equals eighty-seven. Now write your answer below the separation line. Be sure to line up your embossing head!

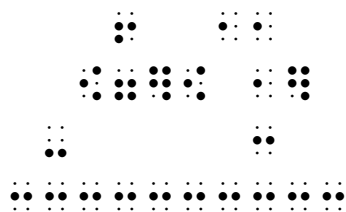
Answer 5.2

The student should write 87 below the separation line with the 8 directly below the 9 in the tens column and the 7 directly below the 4 in the ones column.

$$\begin{array}{r} 8 \ 14 \\ \cancel{9} \ \cancel{4} \\ - \quad 7 \\ \hline 8 \ 7 \end{array}$$

### Practice 5.3

Move to the third subtraction problem and read it. Afterwards, talk through the process you use to figure out the difference and then write the answer.



Excellent! The problem is  $71 - 3$ , and the answer is 68.

Answer 5.3

The student should write 68 below the separation line with the 6 directly below the 7 in the tens column, and the 8 directly below the 1 in the ones column.



$$\begin{array}{r} 6 \ 11 \\ \cancel{7} \ \cancel{1} \\ - \quad 3 \\ \hline 6 \ 8 \end{array}$$

## Fun Fact 8

Some of the first buses in the United States were operated by sightseeing companies in New York City.

## Activity 3

### Practice 5.4

Silently read each of the subtraction problems that include cancellation indicators on pages 6-7. Write each answer on another piece of paper, using your braillewriter, before moving to the next problem. Leave one space between your answers.

$$\begin{array}{r} 6 \ 11 \\ \cancel{7} \ \cancel{1} \\ - \quad 3 \\ \hline 6 \ 8 \end{array}$$

$$\begin{array}{r} 6 \ 11 \\ \cancel{7} \ \cancel{1} \\ - \quad 3 \\ \hline 6 \ 8 \end{array}$$

$$\begin{array}{r} 6 \ 11 \\ \cancel{7} \ \cancel{1} \\ - \quad 3 \\ \hline 6 \ 8 \end{array}$$

$$\frac{48}{69} \times \frac{85}{76} = \frac{58}{39}$$

$$\frac{48}{69} \times \frac{85}{76} = \frac{58}{39}$$

$$\frac{48}{69} \times \frac{85}{76} = \frac{58}{39}$$

Answer 5.4

The student should write: 48 69 85 76 58 39.

$$\frac{48}{69} \times \frac{85}{76} = \frac{58}{39}$$

Below the last problem, there is a Nemeth Code terminator.

$$\frac{48}{69} \times \frac{85}{76} = \frac{58}{39}$$

This symbol tells us that we are almost finished with our math adventure. Sometimes this symbol comes at the end of a braille document, just like it is this time. This symbol can also be used in other places within a document to tell us that we are finishing math content and are moving to literary material.

## Fun Fact 9

A double decker bus has two floors and can carry about 70 people.

The bus is stopping! Let's ask the bus driver to confirm that we are at our destination, Main Street!

## Section 6: Review

### Section 6 Materials

#### Activity 4

- Braillewriter
- Braille paper
- Timer
- A single die
- Optional:
  - Base ten units and rods in different containers, baskets, or bowls (Alternative: Digi-Blocks which is a different type of base ten blocks that nest)
  - Counting to 120 Chart available in the curriculum
  - Place Value Chart 1 available in contracted and uncontracted braille within the curriculum (Alternative: two-compartment sorting tray with the right compartment labeled “ones” and the left compartment labeled “tens” in braille)

### Section 6 Teacher Notes

#### Activity 4

- If any of the students read print, then they will need paper and a pencil instead of a braillewriter and braille paper.
- Additional directions are included in the Teacher Guide.

### Section 6 Teacher Script

Yay! We did it! Taking the bus is a fun way to travel! Let’s finish our adventure with an activity.

#### Activity 4

We are going to play a new game for two or more players. The player who is closer to 10, but not less than 10, when the timer rings, wins the game! You will need your braillewriter, braille paper, a timer, and a die.

First, decide how long the game will last and set a timer. Second, have the students write the number 99 at the top of their page. Third, decide which player will roll the die first.

As each player rolls the die, they can either take the number as a one or a ten. For example, if the player rolls a 3, they can take it as a 3 or a 30. Students subtract their numbers until a person either hits 10 or the timer rings!

The first number rolled is subtracted from 99, using spatial format. So, if the player decides to take it as a 30, the problem would be 99 minus 30 equals 69.

$$\begin{array}{r} 99 \\ - 30 \\ \hline 69 \end{array}$$

So if the player decides to take it as a 3, the problem would be 99 minus 3 equals 96.

$$\begin{array}{r} 99 \\ - 3 \\ \hline 96 \end{array}$$

The goal is to reach 10 or be closer to 10 than your opponents when the timer rings, so choose your number carefully each time! If your number is less than 10, you automatically lose! Good luck, Nemeth superstar!