

# **First Grade Module 6**

## **Writing and Comparing Numbers**

### **Teacher Script Answer Key**

#### **Introduction**

- 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: Solving Problems about Ten More or Ten Less**

##### **Section 1 Materials**

- Base ten units and rods in containers, baskets, or bowls (Alternative: Digi-Blocks)
- Counting to 120 Chart available in braille within the curriculum (Although the double-spaced chart is recommended for most first graders, a single-spaced alternative chart is also available in the curriculum.)
- Activity 1: Counting to 120 Chart

##### **Section 1 Teacher Notes**

- Give the student time to think about how they could determine how many stickers the children have. Afterwards, encourage the student to verbalize different strategies and tools that they could use to determine the answer to the question. There are several possible correct responses.
- Encourage the student to verbalize the process that they use to solve the problem. Provide assistance as needed.
- Please note that the Counting to 120 Chart incorporates a 40 cell line. There is not a title in the braille document so that all of the numbers fit on one page.

- Count by 10s, beginning with 3. If needed, have the student keep their place on 3 with their left hand and move their right hand to the next row and count to 10 with you each time. Make sure they notice that their right hand ends up directly under where they started. Don't give this away, but try to help them discover the pattern.
- Have the student keep their place on 45 with their left hand and move their right hand to the next row and count to 10 with you.
- Encourage the student to verbalize the process that they use to solve the problem. Provide assistance as needed.
- Have the student keep their place on 87 with their left hand and move their right hand to the previous row and count 10 less with you. 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.
- Activity 1
  - Repeat saying each problem if needed.
  - Assist the student in locating the number on the chart as needed.

## **Section 1 Teacher Script**

It's time to prepare for a ride in a blimp! Before we begin our adventure, let's explore different ways to find ten more or ten less than a given number.

Listen as I read a word problem. Mike has 23 stickers. Juan has ten more stickers than Mike, and Ryan has ten less stickers than Mike. How many stickers does each child have?

How could you figure out how many stickers each child has?

We could use the base ten blocks to help us determine how many stickers each child has. Begin by building how many stickers Mike has.

Yes, you would need 2 tens blocks (rods) and 3 unit blocks to build 23. Ryan has ten fewer stickers, so how could we model ten less?

You got it! If I take one ten block away, then I would have one ten block and three unit blocks. So how many stickers does Ryan have?

Yes, Ryan has 13 stickers. Now that we know how many stickers Ryan has, let's figure out how many stickers Juan has.

Begin by building how many stickers Mike has. Yes, just like last time, we would need 2 ten blocks (rods) and 3 unit blocks to build 23. Juan has ten more sticks than Mike, so how could we model ten more?

That is correct! If I add one ten block, then we would have three ten blocks and three unit blocks. So how many stickers does Juan have?

Yes, Juan has 33 stickers.

### **Practice 1.1**

Use your base ten blocks and try another word problem. Farmer Zeb has 38 cows. Farmer Ben has ten more cows than Farmer Zeb, and Farmer Jake has ten less cows than Farmer Zeb. How many cows does each farmer have?

Answer 1.1

Begin by building how many cows Farmer Zeb has. We would need 3 tens blocks and 8 unit blocks to build 38. Farmer Ben has ten more cows than Farmer Zeb. If I add one ten block, then we would have four ten blocks and eight unit blocks. Farmer Ben has 48 cows.

Then build how many cows Farmer Zeb has again. We would need 3 tens blocks and 8 unit blocks to build 38. Farmer Jake has ten less cows than Farmer Zeb. If I take one ten block away, then we would have two ten blocks and eight unit blocks. Farmer Jake has 28 cows.

Way to go, math superstar!

### **Fun Fact 1**

Unlike a hot air balloon, a blimp has a shape and structures that allow it to be maneuvered.

We can also use our Counting to 120 Chart to help us solve problems about ten more or ten less.

Let's warm up by using your Counting to 120 Chart to skip count by 10s.

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

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.

Now use your Counting to 120 Chart to skip count by 10s, beginning with 3.

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

What pattern did you notice? Yes, once again, all of the numbers were in the same column.

Now let's use our Counting to 120 Chart and figure out what number is ten more than 45. Begin by finding 45 on your chart.

We can count ten more and see how many it is.

46 47 48 49 50 51 52 53 54 55

Yes, 55 is ten more than 45.

Did you notice your right hand ends up directly under where you started, just like when you skip counted?

### **Practice 1.2**

Try another problem. What number is ten more than 77?

Answer 1.2

Hopefully, they will realize that they can go directly under the 77 to find 87.

You got it! 87 is ten more than 77.

### **Practice 1.3**

What number is ten more than 39?

Answer 1.3

Hopefully, they will realize that they can go directly under the 39 to find 49.

Yes, 49 is ten more than 39.

Now let's use our Counting to 120 Chart and figure out what number is ten less than 88. Begin by finding 88 on your chart.

We can count ten less and see how many it is. Notice this time we are counting backwards.

87 86 85 84 83 82 81 80 79 78

Yes, 78 is ten less than 88.

Did you notice your right hand ends up directly above where you started?

### **Practice 1.4**

Try another problem. What number is ten less than 51?

Answer 1.4

Hopefully, they will realize that they can go directly above the 51 to find 41.

You got it! 41 is ten less than 51.

Let's continue to practice using our Counting to 120 Chart to help us solve problems about ten more and ten less. Tell me what number is ten more than 103. That's right! 113 is ten more than 103. What number is ten more than 64? You got it now! 74 is ten more after 64. What number is ten more than 90? Yes, 100 is ten more than 90.

Let's try a couple more. What number is ten more than 108? That is correct! 118 is ten more than 108. What number is ten more than 19? You got it! 29 is ten more than 19.

### **Practice 1.5**

Now you give me an example about ten more.

Answer 1.5

The student can ask what number is ten more than any number from 1 through 110.

Now let's try some problems about ten less. What number is ten less than 82? You got it! 72 is ten less than 82. What number is ten less than 39? You got it! 29 is ten less than 39.

Let's try another one. What number is ten less than 117? You got it! 107 is ten less than 117.

### **Practice 1.6**

Now you give me an example about ten less.

Answer 1.6

The student can ask what number is ten less than any number from 11 through 120.

## **Fun Fact 2**

A blimp is usually shaped like a hot dog and holds helium gas.

## **Activity 1**

You will not need any new materials for this activity. Listen carefully as I read each problem, and then use your Counting to 120 Chart to answer the questions aloud.

### **Practice 1.7**

1. What number is ten less than 115?

Answer 1.7

105

### **Practice 1.8**

2. What number is ten more than 86?

Answer 1.8

96

### **Practice 1.9**

3. What number is ten more than 107?

Answer 1.9

117

### **Practice 1.10**

4. What number is ten less than 29?

Answer 1.10

19

### **Practice 1.11**

5. What number is ten less than 120?

Answer 1.11

110

Let's try a few more.

**Practice 1.12**

6. What number is ten less than 91?

Answer 1.12

81

**Practice 1.13**

7. What number is ten more than 100?

Answer 1.13

110

**Practice 1.14**

8. What number is ten more than 62?

Answer 1.14

72

**Practice 1.15**

9. What number is ten less than 58?

Answer 1.15

48

**Practice 1.16**

10. What number is ten less than 113?

Answer 1.16

103

That was excellent work!

## Section 2: Writing Numbers in Standard Form

### Section 2 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Braillewriter
- Braille paper
- Optional: G1-M6-Writing-Answers.brf

### Section 2 Teacher Note

Repeat saying each number in expanded form as many times as needed.

### Section 2 Teacher Script

It is time for a ride in a blimp! We will board one by one as the returning passengers get out one by one of the cabin called a gondola. The helium level in the blimp is perfectly balanced with the weight of the passengers, so we must be careful! As we board, let's review how to write numbers in standard form and expanded form.

Begin by locating the first line of braille on page 1. Softly glide your fingers across the braille. It says First Grade. Now move your hands down to the second line of braille on the page. It says Module 6. Now move your hands down to the third line of braille on the page. It begins in cell 5, and it says Section 2. Afterwards, there is a two-cell symbol.

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

⠠⠠

Do you remember what this symbol is called?

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

Now let's read the fourth line of braille together.

62 = 60+2

⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠



Another way of writing this equation is written on the fifth line of braille.

$$60+2 = 62$$

Now read the next two lines of braille along with me.

$$35 = 30 + 5$$

$$30 + 5 = 35$$

Now try reading the last five lines of braille on page 1 by yourself!

$$89 = 80 + 9$$

$$80 + 9 = 89$$

$$74 = 70 + 4$$

$$10+8 = 18$$

$$60+1 = 61$$

That was super reading!

### Fun Fact 3

The part of the blimp that holds the helium is called an envelope. It is made with fabric that is similar to the fabric used for space suits.

Read the number at the top of page 2.

⠠⠠⠠⠠

Yes, the number is 67. When we write numbers in numerical digits, we are using standard form. We can also expand the number by showing the value of each digit. We call this expanded form.

Read the second line of braille for an example of a number in expanded form.

20+3

⠠⠠⠠⠠⠠⠠

On the third line of braille, there is a Nemeth Code terminator.

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

⠠⠠

### **Practice 2.1**

I will give you a number in expanded form, and then you will write the number in standard form. You may use your braillewriter and braille paper. Space one time between the numbers.

60+2

30+7

70+1

20+2

90+4

50+0

### Answer 2.1

The student should write the following numbers: 62, 37, 71, 22, 94, and 50. The student can also check their answers for Section 2 using page 1 of the writing answers document.

Let's check your work together. Read your answers one at a time!

### Fun Fact 4

Rudders mounted to the tail are used to steer a blimp.

### Section 3: Writing Numbers in Expanded Form

## Section 3 Materials

- Braillewriter
- Braille paper
- Optional: G1-M6-Writing-Answers.brf

## Section 3 Teacher Note

Repeat saying each number in standard form as many times as needed.

## Section 3 Teacher Script

Next, I will give you a number in standard form, and you will write the number in expanded form. You may use your braillewriter and braille paper.

## Practice 3.1

We will write the first two numbers in expanded form together.

The first number is 82. How do we begin?

Yes, we will begin with the number eighty, followed by a plus sign. How do we write a plus sign in braille?

Yes, we will write a plus sign with the dots 3-4-6. Will we need a space before or after the plus sign?

That's right. We will not need a space. Next we will write the number 2. We do not need another numeric indicator because the number is coming after the plus sign. So we would press dots 2-3 after the plus sign to write the number 2.

### Answer 3.1

The student should write:  $80+2$ . The student can also check their answers for Section 3 using page 2 of the writing answers document.

## Practice 3.2

Move to the next line by pressing the line spacing key twice. Let's try another one together. The next number is 29. How do we begin?

Yes, we will begin with the number twenty, followed by a plus sign. How do we write a plus sign in braille?

You got it! We will write a plus sign with the dots 3-4-6. Will we need a space before or after the plus sign?

That's right. We will not need a space. Next we will write the number 9. We do not need another numeric indicator because the number is coming after the plus sign. So we would press dots 3-5 after the plus sign to write the number 9.

### Answer 3.2

 $20+9$ 

Now it is time for you to write several numbers in expanded form by yourself. Just let me know if you need help. Good luck, pilot!

### Practice 3.3

45

### Answer 3.3

 $40+5$

### Practice 3.4

28

Answer 3.4

$$20+8$$

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 3.5

92

Answer 3.5

$$90+2$$

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 3.6

68

Answer 3.6

$$60+8$$

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 3.7

26

Answer 3.7

$$20+6$$

⠠⠠⠠⠠⠠⠠⠠⠠

Let's check your work together. Read your answers one at a time!

## Section 4: Standard Form and Expanded Form

## Section 4 Materials

## Activity 2

- Student Braille Document: G1-M6-Student-Materials.brf
- Braillewriter
- Braille paper
- Optional: G1-M6-Writing-Answers.brf

## Section 4 Teacher Script

## Activity 2

In addition to your braille document, you will need your braillewriter and braille paper for this activity.

Begin by finding page 2 in your braille document. Where do you find the braille page number?

That's right. The braille page number is placed at the right margin on the last line. Now scan the page for the name of the section.

You found it! It says Section 4, and it is followed by an opening Nemeth Code indicator.

## Practice 4.1

Now read each number in expanded form, and then write the number in standard form. Space one time between the numbers.

[Make sure the student is viewing the last seven lines of braille on page 2.]

 $90+4$  $30+2$ 

20+5

$70+5$

$30+9$

40+0

$80+7$

### Answer 4.1

The student should write the following numbers: 94, 32, 25, 75, 39, 40, and 87. The student can also check their answers for Section 4 using page 3 of the writing answers document.

## Practice 4.2

For the second part of the activity, read each number in standard form on page 3 and then write the number in expanded form. Press your line spacing key twice to go to a new line each time.

52

Answer 4.2

$50+2$

### Practice 4.3

68

⠠⠠⠠⠠⠠⠠

Answer 4.3

60+8

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 4.4

32

⠠⠠⠠⠠⠠⠠

Answer 4.4

30+2

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 4.5

71

⠠⠠⠠⠠⠠⠠

Answer 4.5

70+1

⠠⠠⠠⠠⠠⠠⠠⠠

### Practice 4.6

14

⠠⠠⠠⠠⠠⠠



### Answer 4.6

 $10+4$ 

### Practice 4.7

55

Answer 4.7

50+5

## Practice 4.8

60

Answer 4.8

 $60+0$ 

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

### Fun Fact 5

Two engines on a blimp provide the thrust necessary to move through the air.

## Section 5: Greater Than Sign

## Section 5 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Braillewriter
- Braille paper

- Optional: G1-M6-Writing-Answers.brf
- Activity 3
  - Braillewriter
  - Braille paper
  - Optional: G1-M6-Writing-Answers.brf

## Section 5 Teacher Notes

### Activity 3

- Repeat saying the symbols, numbers, and problems as many times as needed.
- Remind the student to move their fingers across the braille and check their work if needed.

## Section 5 Teacher Script

The ground crew is letting go of the ropes, and the pilot is turning on the engines and angling the nose of the blimp toward the sky. Within moments, we will be floating high above the ground.

The engines are noisy, so it is important that we wear headphones throughout our journey. This will protect our hearing and allow us to communicate over the sounds of the engine. As we begin our journey, let's learn two new signs of comparison. These Nemeth symbols are used when we have different quantities or values.

Begin by finding page 4 in your braille document. Then scan the page for the name of the section, and softly guide your fingers across it.

It says Section 5. It is followed by a two-cell symbol. What is it called?

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

Yes, it is an opening Nemeth Code indicator!

In the middle of the next line of braille, you will find the Nemeth symbol for greater than. There is a line of dots 2-5 before and after the greater than sign.

Great work, pilot! Did you notice that the greater than sign is a two-cell symbol? We use dots 4-6 in the first cell and dot 2 in the second cell.

## Practice 5.1

Now it is your turn to find the greater than sign in each line of braille, beginning with the third line of braille on the page. Move your fingers lightly across each line of braille and say "is greater than" when you find the symbol for greater than!

[Five lines of dots 2-5 on page 4 with a greater than symbol inserted in each line.]

### Answer 5.1

The student will say "is greater than" when they point to a greater than sign 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! Below the last line of braille with a greater than symbol, there is a Nemeth Code terminator.

Let's learn how to write a greater than sign in braille. It will take us two braille cells to write a greater than sign. In the first braille cell, we will need the dots 4-6. In the second cell, we will need the dot 2.

There is a space before and after the greater than sign since it is a sign of comparison. Notice that you begin braille using two fingers of the right hand, followed by one finger of the left hand. You will always use your right hand first and then your left hand. It is a pattern. Also, two fingers are "greater than" one finger, and two dots are "greater than" one dot.

### **Practice 5.2**

Place your fingers on the correct keys on your braillewriter. Then practice writing a greater than sign several times.

Answer 5.2

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠

The directions are to write the greater than sign several times, so there may be variation in how many times the greater than sign is written.

### **Activity 3**

You will need your braillewriter and braille paper for this activity.

### **Practice 5.3**

Listen and then braille what you hear.

1. greater than sign
2. plus sign
3. general omission symbol
4. 80+3
5. equals sign
6. 117
7. greater than sign
8. 60+5
9. minus sign
10. greater than sign

### Answer 5.3

The student can check their answers for Section 5 using page 4 of the writing answers document.

1. greater than sign (dots 4-6, followed by dot 2)

2. plus sign (dots 3-4-6)

3. general omission symbol (dots 1-2-3-4-5-6)

4.  $80+3$

The figure consists of two 3x3 grids of dots. The left grid has 10 dots: the top row has 2 dots (top-left, top-middle), the middle row has 3 dots (middle-left, middle-middle, middle-right), and the bottom row has 5 dots (bottom-left, bottom-middle, bottom-right, and two dots in the bottom-left and bottom-middle positions). The right grid has 11 dots: the top row has 2 dots (top-left, top-middle), the middle row has 3 dots (middle-left, middle-middle, middle-right), and the bottom row has 6 dots (bottom-left, bottom-middle, bottom-right, and three dots in the bottom-left and bottom-middle positions).

5. equals sign (dots 4-6, dots 1-3)

6. 117

7. greater than sign (dots 4-6, followed by dot 2)

8.  $60+5$

9. minus sign (dots 3-6)

Figure 1 shows five 3x3 dot patterns labeled (a) through (e). Each pattern consists of a 3x3 grid of positions, with some positions containing a dot. The number of dots in each pattern is as follows:

- (a) 5 dots
- (b) 6 dots
- (c) 7 dots
- (d) 8 dots
- (e) 9 dots

10. greater than sign (dots 4-6, followed by dot 2)



### Fun Fact 6

A ground crew follows a blimp wherever it goes, and pilots of blimps must be certified for lighter-than-air crafts by the Federal Aviation Administration in the United States.

## Section 6: Less Than Sign

## Section 6 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Braillewriter
- Braille paper
- Optional: G1-M6-Writing-Answers.brf
- Activity 4
  - Braillewriter
  - Braille paper
  - Optional: G1-M6-Writing-Answers.brf

## Section 6 Teacher Notes

## Activity 4

- Repeat saying the symbols, numbers, and problems as many times as needed.
- Remind the student to move their fingers across the braille and check their work if needed.

## Section 6 Teacher Script

Locate the top line of braille on page 5, and softly guide your fingers across it. It begins in cell 5, and it says Section 6. It is followed by an opening Nemeth Code indicator.

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



In the middle of the next line of braille, you will find the Nemeth symbol for less than. There is a line of dots 2-5 before and after the less than sign.

Did you notice that the less than sign is also a two-cell symbol? We use dot 5 in the first cell and dots 1-3 in the second cell.

## Practice 6.1

Now it is your turn to find the less than sign in each line of braille, beginning with the third line of braille on the page. Move your fingers lightly across the line of braille and say "is less than" when you find the less than sign!

[Five lines of dots 2-5 on page 5 with a less than symbol inserted in each line.]

Answer 6.1

The student will say "is less than" when they point to a less than sign 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 beginning of the line

Line 5: at the end of the line

Good job, pilot! Below the last line of braille with a less than symbol, there is a Nemeth Code terminator.

Now it is time to learn how to write a less than sign in braille. It will take us two braille cells to write a less than sign. In the first braille cell, we will need a dot 5. In the second cell, we will need the dots 1-3.

There is also a space before and after the less than sign since it is a sign of comparison. Notice that you begin braille using one finger of the right hand, followed by two fingers of the left hand. You always use your right hand first, and then you left hand. It is a pattern. Also, one finger is "less than" two fingers, and one dot is "less than" two dots.

### Practice 6.2

Place your fingers on the correct keys on your braillewriter. Then practice writing a less than sign several times.

Answer 6.2

⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨

The directions are to write the less than sign several times, so there may be variation in how many times the less than sign is written.

### Activity 4

You will need your braillewriter and braille paper for this activity.

### Practice 6.3

Listen and then braille what you hear.

1. less than sign
2. 30+8
3. greater than sign
4. long dash
5. less than sign
6. 90+4
7. 120



## 8. greater than sign

9. 87

10. less than sign

### Answer 6.3

The student can check their answers for Section 6 using page 5 of the writing answers document.

1. less than sign (dot 5, followed by dots 1-3)

2.  $30+8$

3. greater than sign (dots 4-6, followed by dot 2)

4. long dash (four cells of dots 3-6)

5. less than sign (dot 5, followed by dots 1-3)

6.  $90+4$

7. 120

8. greater than sign (dots 4-6, followed by dot 2)

9. 87

10. less than sign (dot 5, followed by dots 1-3)

## Fun Fact 7

Some blimps are equipped with electric lights so that they can be flown at night.

## Section 7: Comparing Numbers 1 – 10

## Section 7 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Base ten units and rods (Alternative: Digi-Blocks)

## Section 7 Teacher Note

- Encourage the student to verbalize the process that they use to solve the problem. Provide assistance as needed.

## Section 7 Teacher Script

Excellent writing! We use these new Nemeth symbols when the quantity on one side is different than the quantity on the other side. Scan page 6 and find the name of the section.

Yes, you found it at the top of the page. It says Section 7. Afterwards, there is an opening Nemeth Code indicator.

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

Now softly guide your fingers across the second line of braille as I read an example.

[Point out that the greater than sign is voiced as "is greater than".]

7 is greater than 1.

$7 > 1$

Notice that there is a space before and after the greater than sign. In addition, the numbers before and after the greater than sign begin with a numeric indicator.

The greater than sign allows us to explain the relationship between the numbers 7 and 1. Seven is more than one. In other words, the first number, 7, is larger than the second number, 1.

Let's build both of the numbers with base ten blocks (or Digi-blocks) to confirm that 7 is more than 1.

Yes, seven unit blocks is more than one unit block. Let's read another inequality together on the third line of braille.

[Point out that the less than sign is voiced as "is less than".]

2 is less than 8.

$2 < 8$

The less than symbol also allows us to explain the relationship between two numbers. Two is less than eight. In other words, the first number, 2, is less than the second number, 8.

Let's build both of the numbers with base ten blocks (or Digi-blocks) to confirm that 2 is less than 8.

Yes, two unit blocks is less than eight unit blocks.

The long dash is sometimes used when a sign of comparison is missing. When reading such a problem, you will read the long dash as “blank”.

## Practice 7.1

Let's read the fourth line of braille together.

4 \_\_\_\_ 9

⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠

Yes, this would be read as 4 blank 9. Which sign of comparison is missing and how do you know?

Answer 7.1

Build both of the numbers with base ten blocks (or Digi-blocks). Four unit blocks is less than nine unit blocks. So, you would use the less than sign. 4 is less than 9.

Fantastic! Yes, you would use the less than sign. 4 is less than 9.

### Practice 7.2

Read each expression with a long dash, build each number, tell me which sign of comparison is missing, and then read the inequality correctly.

[Make sure that the student is viewing the fifth line of braille on page 6.]

10 \_\_\_\_ 3

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠

Answer 7.2

10 blank 3

Build both of the numbers with base ten blocks (or Digi-blocks). One tens block is greater than three unit blocks. So, you would use the greater than sign. 10 is greater than 3.

Excellent work, Nemeth superstar! Yes, you would use the greater than sign. 10 is greater than 3. Now you try three more on your own.

### Practice 7.3

5 \_\_\_\_ 2

⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠ ⠠⠠⠠

### Answer 7.3

5 blank 2

Build both of the numbers with base ten blocks (or Digi-blocks). Five unit blocks is greater than three unit blocks. So, you would use the greater than sign. 5 is greater than 2.

## Practice 7.4

6 \_\_\_\_\_ 8

### Answer 7.4

6 blank 8

Build both of the numbers with base ten blocks (or Digi-blocks). Six unit blocks is less than eight unit blocks. So, you would use the less than sign. 6 is less than 8.

## Practice 7.5

0 \_\_\_\_\_ 10

Answer 7.5

0 blank 10

Build both of the numbers with base ten blocks (or Digi-blocks). Zero unit blocks is less than one tens block. So, you would use the less than sign. 0 is less than 10.

Below the last problem, there is a symbol that tells us that we are finishing math content. What is it called?

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

Yes, the two-cell symbol is called a Nemeth Code terminator.

## Fun Fact 8

In 1852, Henri Giffard built the first blimp, which consisted of a gas-filled bag with a propeller and steam engine.

# Section 8: Comparing Two-Digit Numbers

## Section 8 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Base ten units and rods (Alternative: Digi-Blocks)
- Counting to 120 Chart available in braille within the curriculum (Although the double-spaced chart is recommended for most first graders, a single-spaced alternative chart is also available in the curriculum.)

## Section 8 Teacher Notes

- When using the Counting to 120 Chart, responses may vary. Don't give it away, but try to help the student discover that when their right hand ends up above their left hand, the first number is larger than the second number.
- Don't give it away, but try to help the student discover that when their right hand ends up below their left hand, the first number is smaller than the second number.
- Also try to help the student discover that when comparing 57 and 52 their hands are on the same row since both numbers have 5 tens. When the student's right hand ends up to the left of the first number, the first number is larger or "greater than" the second number.
- Encourage the student to verbalize the process that they use to solve the problem. Provide assistance as needed.

## Section 8 Teacher Script

We can also use the less than and greater than signs when comparing two-digit numbers. Begin by finding page 7 in your braille document. Let's find the braille page number 7 to make sure that we are on the correct page. Where do you find the braille page number?

Yes, it is placed at the right margin on the last line.

Now scan the page to find the name of the section. It begins in cell 5, and it says Section 8.

You found it! It is followed by an opening Nemeth Code indicator.

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

⠠⠠⠠

Read the second line of braille along with me.

39 > 13

⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠

It would be read as 39 is greater than 13. Let's begin by building both of the numbers with base ten blocks (or Digi-blocks).

When we compare two-digit numbers, we begin by comparing the digits in the tens column if they are different. The number with more tens is the greater number; the number with less tens is the smaller number.

The digits in the tens column are different in 39 > 13. How many tens and ones are in 39?

Yes, 39 has 3 tens and 9 ones. How many tens and ones are in 13?

You got it! Thirteen has 1 ten and 3 ones. Which number, 39 or 13, has more tens?

That is excellent! Since 39 has 3 tens and 13 only has 1 ten, 39 is the larger number. So the first number, 39, is greater than the second number, 13.

We could have also used our Counting to 120 Chart to determine if the first number is smaller or larger than the second number. Begin by finding the first number on the chart. Keep your left hand on the first number, and then find the second number on the chart with your right hand. What do you notice?

That's right! The first number, 39, is larger or "greater than" the second number, 13.

Read the next inequality on the third line of braille.

69 < 95

⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠

The digits in the tens column are also different in this inequality. How many tens and ones are in 69?

Yes, 69 has 6 tens and 9 ones. How many tens and ones are in 95?

You got it! 95 has 9 tens and 5 ones. Which number, 69 or 95, has more tens?

Yes, 95 has more tens. So 69 is smaller than 95. In other words, the first number, 69, is less than the second number, 95.

Once again, we could have also used our Counting to 120 Chart to determine if the first number is smaller or larger than the second number. Begin by finding the first number on the chart. Keep your left hand on the first number, and then find the second number on the chart with your right hand. What do you notice?

That is correct! The first number, 69, is smaller or "less than" the second number, 95.

### Fun Fact 9

Blimps have soft sides. When the gas is released, the blimp collapses.

Let's talk through another inequality together. Begin by reading the next inequality on the fourth line of braille.

$$57 > 52$$

That is correct. It would be read as 57 is greater than 52.

Build both of the numbers with base ten blocks (or Digi-blocks) and let's compare them. When we compare two-digit numbers, we begin by comparing the digits in the tens column if they are different.

How many tens and ones are in 57?

Yes, 57 has 5 tens and 7 ones. How many tens and ones are in 52?

You got it! Fifty-two has 5 tens and 2 ones.

Both 52 and 57 have 5 tens, so we will need to compare the digits in the ones column to determine which number is bigger.

Fifty-seven has 7 ones, and 52 has 2 ones. Thus, 57 is greater than 52.



Once again, we could have also used our Counting to 120 Chart to determine the relationship between the numbers. Begin by finding the first number on the chart. Keep your left hand on the first number, and then find the second number on the chart with your right hand. What do you notice?

That is correct! The first number, 57, is larger or “greater than” the second number, 52.

## Practice 8.1

Let's read the next braille line together.

[Make sure the student is viewing the fifth line of braille on page 7.]

63      34

It would be read as 63 blank 34. Which sign of comparison is missing and how do you know?

### Answer 8.1

63 has 6 tens and 3 ones. 34 has 3 tens and 4 ones. Since 63 has 6 tens and 34 only has 3 tens, 63 is the larger number. So 63 is greater than 34. Or the student could have used the Counting to 120 Chart to determine the relationship between the numbers.

Let's try four more. Read each expression with a long dash, build each number, tell me which sign of comparison is missing, and then read the inequality correctly.

[Make sure the student is viewing the last four problems on page 7.]

## Practice 8.2

85 24



Answer 8.5

75 blank 2

75 has 7 tens and 5 ones. 2 has 0 tens and 2 ones. Since 75 has 7 tens and 2 has zero tens, 75 is the larger number. So 75 is greater than 2. Or the student could have used the Counting to 120 Chart to determine the relationship between the numbers.

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

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



## Fun Fact 10

Blimps are more fuel efficient than planes or cars.

# Section 9: Writing Inequalities

## Section 9 Materials

- Student Braille Document: G1-M6-Student-Materials.brf
- Braillewriter
- Braille paper
- Optional: G1-M6-Writing-Answers.brf
- Activity 5: same as materials used in the rest of Section 9
- Activity 6
  - Braillewriter
  - Braille paper
  - Optional: G1-M6-Writing-Answers.brf

## Section 9 Teacher Notes

- Activity 5: Encourage the student to verbalize the process they use to determine the missing inequality sign. Provide assistance as needed.
- Activity 6
  - Repeat saying each inequality as many times as needed.
  - Remind the student to move their fingers across the braille and check their work if needed.

## Section 9 Teacher Script

## Activity 5

You will not need any additional materials for this activity. Scan page 8 and find the name of the section.

That's right. It begins in cell 5, and it says Section 9. It is followed by an opening Nemeth Code indicator.

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

Next, read the expressions and find the long dash. After you find the long dash, write the missing sign of comparison. Don't forget to number your problems. Good luck, math superstar!

## Practice 9.1

1. 79 \_\_\_\_\_ 57

### Answer 9.1

The student can also check their answers for Section 9 using pages 6-7 of the writing answers document.

1. Greater than (dots 4-6, followed by dot 2)

## Practice 9.2

2. 15 \_\_\_\_\_ 21

### Answer 9.2

2. Less than (dot 5, followed by dots 1-3)

Figure 1 shows four 3x3 dot patterns. Pattern (a) has 6 dots: (1,1), (1,2), (2,1), (2,2), (3,1), (3,2). Pattern (b) has 7 dots: (1,1), (1,2), (2,1), (2,2), (2,3), (3,1), (3,2). Pattern (c) has 8 dots: (1,1), (1,2), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3). Pattern (d) has 9 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3).

### Practice 9.3

3. 32 \_\_\_\_\_ 36

Figure 1 shows four 3x3 grids of dots. Each grid has a central dot. The first grid has 8 dots in total. The second grid has 9 dots in total. The third grid has 10 dots in total. The fourth grid has 11 dots in total.

### Answer 9.3

3. Less than (dot 5, followed by dots 1-3)

## Practice 9.4

4. 90 \_\_\_\_\_ 13

### Answer 9.4

4. Greater than (dots 4-6, followed by dot 2)

## Practice 9.5

5. 71 \_\_\_\_\_ 68

Answer 9.5

5. Greater than (dots 4-6, followed by dot 2)

## Practice 9.6

6. 40 \_\_\_\_\_ 42

Figure 1 shows four 3x3 dot patterns labeled (a), (b), (c), and (d). Each pattern consists of 10 dots arranged in a 3x3 grid. Pattern (a) has dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3), with the dot at (2,2) missing. Pattern (b) has dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3), with the dot at (2,2) missing. Pattern (c) has dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3), with the dot at (2,2) missing. Pattern (d) has dots at (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), and (3,3), with the dot at (2,2) missing.





### Answer 9.9

65 > 32

### Practice 9.10

17 is less than 43.

### Answer 9.10

$17 < 43$

### Practice 9.11

76 is less than 77.

Answer 9.11

76 < 77

### Practice 9.12

93 is greater than 39.

Answer 9.12

93 > 39

### Practice 9.13

28 is less than 76.

Answer 9.13

$28 < 76$



### Practice 9.14

63 is less than 68.

Answer 9.14

$63 < 68$

### Practice 9.15

55 is greater than 41.

Answer 9.15

55 > 41

### Practice 9.16

68 is greater than 59.

Answer 9.16

68 > 59

We have drifted back to the ground and thanks to the pilot and ground crew, we had a soft landing!

Now that we are back safely on the ground, you are ready for the module 6 review! Thank you for all of your hard work! You are a Nemeth all-star!

## Section 10: Review

## Section 10 Materials

## Activity 7

- G1-M6-Game-Cards-C.brf available in braille within the curriculum
- Braillewriter to keep track of points (Alternatives: APH Score Card Set, abacus, craft sticks in a container)

## Section 10 Teacher Notes

### Activity 7

- Additional information about the game is available in the Teacher Guide, and the game cards are included in a separate braille document.
- You will need 2-4 players for this game. It can easily be played with students who read print or braille. If some of the players read print, add print to the game cards.

## Section 10 Teacher Script

### Activity 7

We are going to play a new game called Less Than, Greater Than, and Equals. It was created by Carolyn Mason from Texas.

In order to play the game, we will need game cards and a way to keep track of points for each player.

The first player to get 20 points wins the game! We will take turns drawing a card. If you draw a "less than" card and read it correctly, you get one point. If you draw a "greater than" card and read it correctly, you get two points. If you draw an "equals" card, you get zero points. If you draw a "sayings" card, follow the directions.