

Kindergarten Posttest 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.
- It is highly recommended that this posttest be completed across two or more sessions.

Part 1

Part 1 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Braillewriter
- Braille paper
- Small objects in a basket, bowl, or bin
- GK-Posttest-Data-Table.docx

Part 1 Teacher Notes

- As the student completes Questions 1.2-1.14, carefully observe the student's hand movements and record this information on the data table.
- As the student completes Questions 1.15-1.25, carefully observe if the student moves to the next line in braille by pushing the line spacing key twice and record this information on the data table.

Part 1 Teacher Script

Question 1.1

Count aloud to 10, beginning with 1.

Answer 1.1

Numbers 1 to 10

1 2 3 4 5 6 7 8 9 10

The next several questions will help us find out how well you have learned to locate the braille numbers 0 to 10 in a line of braille.

Question 1.2

Let's move to the braille document now. There is just one symbol on the second line of braille. It is on the left side of the page.

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

⠠⠠

You should remember from the module that this 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.

Find the number 10 in the third line of braille.

⠠⠠⠠⠠⠠⠠⠠⠠

Answer 1.2

⠠⠠⠠

The student should point to the fifth item in the line.

Question 1.3

Find the number 4 in the fourth line of braille.

⠠⠠⠠⠠⠠⠠⠠⠠

Answer 1.3

⠠⠠

The student should point to the third item in the line.

Question 1.4

Find the number 2 in the fifth line of braille.

⠠⠠⠠⠠⠠⠠⠠⠠

Answer 1.4

⠠⠠⠠

The student should point to the sixth item in the line.

Question 1.5

Find the number 0 in the sixth line of braille.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

Answer 1.5

⠠⠠⠠

The student should point to the last item in the line.

Question 1.6

Find the number 5 in the seventh line of braille.

⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠

Answer 1.6

⠠⠠⠠

The student should point to the third item in the line.

Question 1.7

Find the number 7 in the last line of braille.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠

Answer 1.7

⠠⠠⠠

The student should point to the fifth item in the line.

Let's try some more on page 2.

Question 1.8

Find the number 6 in the first line of braille.

⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠

Answer 1.8

⠠⠠⠠

The student should point to the fourth item in the line.

Question 1.9

Find the number 10 in the second line of braille.

⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠

Answer 1.9

⠠⠠⠠⠠

The student should point to the last item in the line.

Question 1.10

Find the number 9 in the third line of braille.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

Answer 1.10

⠠⠠⠠

The student should point to the first item in the line.

Question 1.11

Find the number 8 in the fourth line of braille.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

Answer 1.11

⠠⠠⠠

The student should point to the third item in the line.

Question 1.12

Find the number 1 in the fifth line of braille.

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

Answer 1.12

⠠⠠⠠

The student should point to the sixth item in the line.

Question 1.13

Find the number 3 in the sixth line of braille.

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

Answer 1.13

⠠⠠⠠

The student should point to the sixth item in the line.

Question 1.14

Move your hands down to the next line of braille. Now read the numbers.

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

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 1.14

9 0 7 8 3 1

4 6 10 5 2

The next several questions will help us find out how well you have learned to write the numbers 0-10 and create sets of objects that match the numbers.

Now write the numbers that you hear and use the line spacing key twice to move to the next line. Then give me that many objects from the bin or basket.

Question 1.15

1

Answer 1.15

⠼⠠⠤

The student should:

- write number 1
- build 1 with 1 object

Question 1.16

6

Answer 1.16

⠼⠠⠋

The student should:

- write number 6
- build 6 with 6 objects

Question 1.17

3

Answer 1.17

⠼⠠⠢

The student should:

- write number 3
- build 3 with 3 objects

Question 1.18

4

Answer 1.18

⠠⠠⠠⠠

The student should:

- write number 4
- build 4 with 4 objects

Question 1.19

10

Answer 1.19

⠠⠠⠠⠠⠠

The student should:

- write number 10
- build 10 with 10 objects

Question 1.20

7

Answer 1.20

⠠⠠⠠⠠

The student should:

- write number 7
- build 7 with 7 objects

Question 1.21

8

Answer 1.21

⠠⠠⠠⠠

The student should:

- write number 8
- build 8 with 8 objects

Question 1.22

5

Answer 1.22

⠠⠨

The student should:

- write number 5
- build 5 with 5 objects

Question 1.23

2

Answer 1.23

⠠⠆

The student should:

- write number 2
- build 2 with 2 objects

Question 1.24

9

Answer 1.24

⠠⠊

The student should:

- write number 9
- build 9 with 9 objects

Question 1.25

0

Answer 1.25



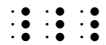
The student should:

- write number 0
- build 0 with no objects

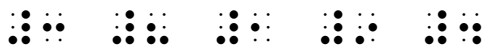
Question 1.26

Let's go back to your braille document. Begin by turning to page 3. Count the number of tally marks on each line. Then write the number using your braillewriter. Space one time between your answers.

[Make sure the student is viewing the first five lines of braille on page 3.]



Answer 1.26



The student should have written: 3 8 1 9 4

Part 2

Part 2 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Braillewriter
- Braille paper
- Base ten blocks: units and rods in different containers, baskets, or bowls (Alternative: Digi-Blocks - a different type of base ten block that nests)
- Place Value Chart 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)
- GK-Posttest-Data-Table.docx

Part 2 Teacher Script

Question 2.1

Count aloud to 20, beginning with 1.

Answer 2.1

The braille version of this answer has been split across three lines to accommodate for 32 cell braille displays.

Numbers 1 to 20

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

The next several questions will help us find out how well you have learned the numbers 11 to 20 as well as Nemeth symbols so far. Follow the directions for each line.

Question 2.2

Turn to page 4 in your braille document. Then find the number 18 in the first line of braille.

Answer 2.2

⠠⠠⠠⠠

The student should point to the second item in the line.

Question 2.3

Find the number 16 in the second line of braille.

⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.3

⠠⠠⠠⠠

The student should point to the sixth item in the line.

Question 2.4

Find the number 13 in the third line of braille.

⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.4

⠠⠠⠠⠠

The student should point to the fifth item in the line.

Question 2.5

Find the number 20 in the fourth line of braille.

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.5

⠠⠠⠠⠠

The student should point to the last item in the line.

Question 2.6

Find the number 14 in the fifth line of braille.

⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

Answer 2.6

⠠⠠⠠⠠⠠

The student should point to the first item in the line.

Question 2.7

Find the general omission symbol in the sixth line of braille.

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

Answer 2.7

⠠⠠

The student should point to the third item in the line.

Question 2.8

Find the number 17 in the seventh line of braille.

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

Answer 2.8

⠠⠠⠠⠠⠠

The student should point to the sixth item in the line.

Turn to page 5 and let's try some more.

Question 2.9

Find the number 15 in the first line of braille.

⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠

Answer 2.9

⠠⠠⠠⠠

The student should point to the third item in the line.

Question 2.10

Find the number 12 in the second line of braille.

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.10

⠠⠠⠠⠠

The student should point to the first item in the line.

Question 2.11

Find the number 19 in the third line of braille.

⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.11

⠠⠠⠠⠠

The student should point to the last item in the line.

Question 2.12

Find the number 11 in the fourth line of braille.

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠ ⠠⠠⠠⠠

Answer 2.12

⠠⠠⠠⠠

The student should point to the fifth item in the line.

Question 2.13

Find the ellipsis in the fifth line of braille.

Answer 2.13

The student should point to the last item in the line.

Question 2.14

Find the mathematical commas in the sixth line of braille.

Figure 1 shows three 5x5 dot patterns. Pattern (a) has 12 dots, pattern (b) has 11 dots, and pattern (c) has 10 dots. The dots are arranged in a grid where (row, column) coordinates start from (0,0) at the top-left.

- Pattern (a) dots: (0,0), (0,1), (0,2), (0,3), (0,4), (1,0), (1,1), (1,2), (1,3), (1,4), (2,0), (2,1), (2,2), (2,3), (2,4), (3,0), (3,1), (3,2), (3,3), (3,4), (4,0), (4,1), (4,2), (4,3), (4,4).
- Pattern (b) dots: (0,0), (0,1), (0,2), (0,3), (0,4), (1,0), (1,1), (1,2), (1,3), (1,4), (2,0), (2,1), (2,2), (2,3), (2,4), (3,0), (3,1), (3,2), (3,3), (3,4), (4,0), (4,1), (4,2), (4,3), (4,4).
- Pattern (c) dots: (0,0), (0,1), (0,2), (0,3), (0,4), (1,0), (1,1), (1,2), (1,3), (1,4), (2,0), (2,1), (2,2), (2,3), (2,4), (3,0), (3,1), (3,2), (3,3), (3,4), (4,0), (4,1), (4,2), (4,3), (4,4).

Answer 2.14

The student should point to the last cell for the first two items listed for a total of two.

Question 2.15

Find the plus sign in the seventh line of braille.

Answer 2.15

The student should point toward the beginning of the line.

Question 2.16

Find the minus sign in the eighth line of braille.

Answer 2.16

⠠

The student should point toward the beginning of the line.

Question 2.17

Find the equals sign in the ninth line of braille.

⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠

Answer 2.17

⠠⠠⠠

The student should point to the middle of the line.

Question 2.18

Move your hands down and then read the numbers on the last two lines of braille on page 5.

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Answer 2.18

19 16 11 15 18

14 12 17 13 20

Now write the numbers that you hear and use the line spacing key twice to move to the next line. Then build it by using base ten blocks (or Digi-Blocks).

Question 2.19

15

Answer 2.19

⠠⠠⠠⠠

The student should:

- write number 15
- build 15 with 1 rod (tens block) and 5 unit blocks

Question 2.20

12

Answer 2.20

⠠⠨⠠⠊

The student should:

- write number 12
- build 12 with 1 rod (tens block) and 2 unit blocks

Question 2.21

19

Answer 2.21

⠠⠨⠠⠊

The student should:

- write number 19
- build 19 with 1 rod (tens block) and 9 unit blocks

Question 2.22

14

Answer 2.22

⠠⠨⠠⠋

The student should:

- write number 14
- build 14 with 1 rod (tens block) and 4 unit blocks

Question 2.23

20

Answer 2.23

⠠⠠⠠⠠⠠⠠

The student should:

- write number 20
- build 20 with 2 rods (tens blocks) and 0 unit blocks

Question 2.24

17

Answer 2.24

⠠⠠⠠⠠⠠⠠

The student should:

- write number 17
- build 17 with 1 rod (tens block) and 7 unit blocks

Question 2.25

18

Answer 2.25

⠠⠠⠠⠠⠠⠠

The student should:

- write number 18
- build 18 with 1 rod (tens block) and 8 unit blocks

Question 2.26

11

Answer 2.26

The student should:

- write number 11
- build 11 with 1 rod (tens block) and 1 unit block

Question 2.27

16

Answer 2.27

The student should:

- write number 16
- build 16 with 1 rod (tens block) and 6 unit blocks

Question 2.28

13

Answer 2.28

The student should:

- write number 13
- build 13 with 1 rod (tens block) and 3 unit blocks

Question 2.29

Let's go back to your braille document. Begin by turning to page 6. Then count the number of tally marks on each line. Afterwards write the number using your braillewriter. Space one time between your answers.

Answer 2.29

The student should have written: 15 18 12 20 14

Part 3

Part 3 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Work tray
- 12 different sized, 2-dimensional shapes (3 circles, 3 triangles, 3 rectangles, and 3 squares) for Question 3.12. These shapes can be found in the following American Printing House for the Blind (APH) kits:
 - MathBuilders, Unit 1: Matching, Sorting, and Patterning Kit
 - Focus in Math Kit
 - APH Feel 'n Peel Sheets: Carousel of Textures has a variety of non-adhesive backed textured paper that can be used to create the shapes
- GK-Posttest-Data-Table.docx

Part 3 Teacher Script

Question 3.1

In problems 1-5 at the top of page 7, find the punctuation indicator and period in each line of braille. Afterwards read the math problems about “one more” aloud. Then tell me what number the general omission symbol stands for.

Answer 3.1

The student should identify the punctuation indicator is in the third cell of each line of braille, and the period is in the fourth cell.

1.5 ?

The general omission symbol stands for 6.

2. 17 ?

The general omission symbol stands for 18.

3. 15 ?

The general omission symbol stands for 16.

4. 19 ?

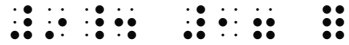
The general omission symbol stands for 20.

5. 8 ?

The general omission symbol stands for 9.

Question 3.2

Read the remaining math problems on page 7 about “one less” aloud. Then tell me what number the general omission symbol stands for.



Answer 3.2

6. 14 ?

The general omission symbol stands for 13.

7. 19 ?

The general omission symbol stands for 18.

8. 6 ?

The general omission symbol stands for 5.

9. 17 ?

The general omission symbol stands for 16.

10. 13 ?

The general omission symbol stands for 12.

Listen and then braille what you hear. This includes brailleing the problem number.

Question 3.3

11. general omission symbol

Answer 3.3

Number 11: general omission symbol which is dots 1-2-3-4-5-6



Question 3.4

12. ellipsis

Question 3.9

17. 4, 5, 6

Answer 3.9

Number 17: 4, 5, 6

Question 3.10

18. 10, 11, 12, ...

Answer 3.10

Number 18: 10, 11, 12, ...

Figure 1 consists of five 5x5 grids, labeled (a) through (e), each representing a different number of children per family. The grids are arranged horizontally. Each grid has a 5x5 arrangement of dots. In each grid, the black dots represent the number of children in each family, and the white dots represent the number of families with that many children. The configurations are as follows:

- (a) 1 child: 1 black dot at (1,1), 2 black dots at (2,1) and (2,2), 3 black dots at (3,1), (3,2), and (3,3), 4 black dots at (4,1), (4,2), (4,3), and (4,4), and 5 black dots at (5,1), (5,2), (5,3), (5,4), and (5,5).
- (b) 2 children: 1 black dot at (1,1), 2 black dots at (2,1) and (2,2), 3 black dots at (3,1), (3,2), and (3,3), 4 black dots at (4,1), (4,2), (4,3), and (4,4), and 5 black dots at (5,1), (5,2), (5,3), (5,4), and (5,5).
- (c) 3 children: 1 black dot at (1,1), 2 black dots at (2,1) and (2,2), 3 black dots at (3,1), (3,2), and (3,3), 4 black dots at (4,1), (4,2), (4,3), and (4,4), and 5 black dots at (5,1), (5,2), (5,3), (5,4), and (5,5).
- (d) 4 children: 1 black dot at (1,1), 2 black dots at (2,1) and (2,2), 3 black dots at (3,1), (3,2), and (3,3), 4 black dots at (4,1), (4,2), (4,3), and (4,4), and 5 black dots at (5,1), (5,2), (5,3), (5,4), and (5,5).
- (e) 5 children: 1 black dot at (1,1), 2 black dots at (2,1) and (2,2), 3 black dots at (3,1), (3,2), and (3,3), 4 black dots at (4,1), (4,2), (4,3), and (4,4), and 5 black dots at (5,1), (5,2), (5,3), (5,4), and (5,5).

Question 3.11

19. 7, 8, 9, ...

Answer 3.11

Number 19: 7, 8, 9, ...

Question 3.12

20. 13, 14, ...

Answer 3.12

Number 20: 13, 14, ...

Question 3.13

I have placed 12 shapes into a work tray. Pick up one shape at a time and tell me if it is a square, rectangle, triangle, or circle.

[The orientation of the shapes should vary.]

Answer 3.13

The student should respond with the correct name of each shape. If the student calls a square a rectangle, tell them that they are correct, but it is a special kind of rectangle. What is its special name?

Tell me about each of the following shapes.

Question 3.14

circle

Answer 3.14

It is a round shape. There are no straight sides or corners on a circle.

Question 3.15

triangle

Answer 3.15

A triangle has 3 sides and 3 corners. Another word for corners is vertices.

Question 3.16

rectangle

Answer 3.16

A rectangle has 4 sides and 4 corners. The opposite sides are the same length, and all 4 corners are the same size.

Question 3.17

square

Answer 3.17

A square is a special kind of rectangle. It has 4 sides and 4 vertices. All sides are the same length, and all 4 corners are still the same size.

Part 4

Part 4 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Numbers Set and the Grid Board from the APH Hundreds Board and Manipulatives Kit (Alternatives: 1-inch graph paper or graphic art tape and braille paper to create a Grid Board or flashcards, Velcro, and a large piece of construction paper to create the charts.)
- GK-Posttest-Data-Table.docx

Part 4 Teacher Note

Ensure that all numbers have been removed from the Grid Board before having the student create a braille chart each time.

Part 4 Teacher Script

Question 4.1

Count aloud to 50, beginning with 1.

Answer 4.1

The braille version of this answer has been split across seven lines to accommodate for 32 cell braille displays.

Numbers 1 to 50

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

Question 4.2

Use the Grid Board to create a braille chart from 1 to 50. Once you finish building your braille chart, read the numbers from 1 to 50 on the chart.

Answer 4.2

The numbers 1 to 50 should be placed consecutively on the top five rows of the Grid Board:

1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50

Question 4.3

Skip count by 10s to 50, using the chart that you just created.

Answer 4.3

10 20 30 40 50

Question 4.4

Find the following numbers on the braille chart that you created:

22 41 38 50 37 29 45 24 33

Answer 4.4

The student should point to the following numbers on the third, fourth, and fifth rows of the Grid Board:

22 41 38 50 37 29 45 24 33

Question 4.5

Use your braille chart and count to 50 beginning with the following numbers:

18 33 7 21

Answer 4.5

Hundreds chart numbers 18 to 50

								18	19	20
21	22	23	24	25	26	27	28	29	30	
31	32	33	34	35	36	37	38	39	40	
41	42	43	44	45	46	47	48	49	50	

Hundreds chart numbers 33 to 50

			33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	

Hundreds chart numbers 7 to 50

								7	8	9	10
11	12	13	14	15	16	17	18	19	20		
21	22	23	24	25	26	27	28	29	30		
31	32	33	34	35	36	37	38	39	40		
41	42	43	44	45	46	47	48	49	50		

Hundreds chart numbers 21 to 50

21	22	23	24	25	26	27	28	29	30		
31	32	33	34	35	36	37	38	39	40		
41	42	43	44	45	46	47	48	49	50		

Question 4.6

Use your braille chart and skip count by 10 through the last row in the chart, beginning with the following numbers:

19 3 14 27

Answer 4.8

38

Question 4.9

What number is one more than 24?

Answer 4.9

25

Question 4.10

What number is one less than 45?

Answer 4.10

44

Question 4.11

What number is one more than 27?

Answer 4.11

28

Question 4.12

What number is one less than 36?

Answer 4.12

35

Question 4.13

What number is one less than 31?

Answer 4.13

30

Question 4.14

What number is one more than 47?

Answer 4.14

48

Question 4.15

What number is one more than 31?

Answer 4.15

32

Question 4.16

What number is one less than 40?

Answer 4.16

39

Question 4.17

What number is one more than 48?

Answer 4.17

49

Part 5

Part 5 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Five and ten frames available in braille within the curriculum (Alternative: APH Tactile Five and Ten Frames)
- Counting bears placed in a bowl (Alternatives: different objects, Unifix cubes, base ten unit blocks)
- Pennies (Alternatives: APH Tactile Tokens, magnetic counters)
- Work tray (Alternatives: cookie sheet or magnetic board)
- Optional: nonslip surface such as a rubber shelf liner or magnetic board to place the five and ten frames on
- Braillewriter
- Braille paper
- GK-Posttest-Data-Table.docx

Part 5 Teacher Notes

- The Tactile Tokens from APH fit perfectly into the five and ten frames and the two textures can represent the two addends.
- You can also use the shapes and line segments from the Picture Maker Wheatley Tactile Diagramming Kit to create the five and ten frames.

Part 5 Teacher Script

You may use your counting bears to help you add the groups in the first four problems.

Question 5.1

My grandfather loves to garden every year! This year he planted 3 tomato bushes and 2 jalapeño plants. How many plants are in his garden this year?

Answer 5.1

5

Question 5.2

Matt is just beginning to collect baseball cards. Last week for his birthday, his friends gave him 4 baseball cards, and his mom bought him a baseball card too. How many baseball cards does he have now?

Answer 5.2

5

Question 5.3

Six dogs were walking in the park. One more dog came to the park and began walking in the park. How many dogs are walking in the park now?

Answer 5.3

7

Question 5.4

Five brothers went swimming, and two friends joined them. How many people went swimming altogether?

Answer 5.4

7

Place the counting bears back in the bowl. You will need your five frame, pennies, and work tray for the next three problems.

Question 5.5

Begin by placing 1 penny on the five frame. How many more pennies are needed to make 5?

Answer 5.5

4

Question 5.6

Remove the pennies from the five frame and place them back in the work tray. Now place 3 pennies on the five frame. How many more pennies are needed to make 5?

Answer 5.6

2

Question 5.7

Use your five frame and show me 3 different ways to make 4.

Answer 5.7

There are several possible correct responses, including $0+4$; $1+3$; $2+2$; $3+1$; and $4+0$.

Put away the five frame. You will need your ten frame, pennies, and work tray for the next 4 problems.

Question 5.8

Use your ten frame and show me 4 different ways to make 10.

Answer 5.8

There are several possible correct responses, including $0+10$; $1+9$; $2+8$; $3+7$; $4+6$; $5+5$; $6+4$; $7+3$; $8+2$; $9+1$; and $10+0$.

Question 5.9

If there are 5 pennies on the ten frame, how many more are needed to make 10?

Answer 5.9

5

Question 5.10

If there are 9 pennies on the ten frame, how many more are needed to make 10?

Answer 5.10

1

Question 5.11

If there are 3 pennies on the ten frame, how many more are needed to make 10?

Answer 5.11

7

Question 5.12

Turn to page 9 in your braille document and find the equals sign in the first line of braille.

Answer 5.12

The student should point toward the middle of the line.

Question 5.13

Move your hands down and read the equations in braille.

[Make sure the student is viewing the remaining eight lines of braille on page 9.]

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Answer 5.13

The student should read: 4 equals 4, 2 equals 2, 5 equals 5, 3 plus 0 equals 3, 1 plus 1 equals 2, 4 equals 1 plus 3, 5 equals 5 plus 0, and 2 plus 2 equals 4.

$$4 = 4$$

$$2 = 2$$

$$5 = 5$$

$$3+0 = 3$$

$$1+1 = 2$$

$$4 = 1+3$$

$$5 = 5+0$$

$$2+2 = 4$$

Question 5.14

Turn to page 10. Now read the equations at the top of the page and tell me what number the general omission symbol stands for each time.

[Make sure the student is viewing the first five lines of braille on page 10.]

Figure 1 shows a 3x3 grid of dot patterns. Each pattern is a 3x3 grid of dots. The patterns are as follows:

Pattern 1: 5 dots (top row: 2, middle: 2, bottom: 1)	Pattern 2: 4 dots (top row: 2, middle: 1, bottom: 1)	Pattern 3: 4 dots (top row: 2, middle: 1, bottom: 1)
Pattern 4: 4 dots (top row: 2, middle: 1, bottom: 1)	Pattern 5: 5 dots (top row: 2, middle: 2, bottom: 1)	Pattern 6: 4 dots (top row: 2, middle: 1, bottom: 1)
Pattern 7: 4 dots (top row: 2, middle: 1, bottom: 1)	Pattern 8: 4 dots (top row: 2, middle: 1, bottom: 1)	Pattern 9: 5 dots (top row: 2, middle: 2, bottom: 1)

The patterns are labeled 1 through 9 in the bottom right corner of the grid.

Answer 5.14

$1+2 = ?$

The general omission symbol stands for 3.

? = 2+0

The general omission symbol stands for 2.

$$? = 4 + 1$$

The general omission symbol stands for 5.

$3+0 = ?$

The general omission symbol stands for 3.

$$2+3 = ?$$

The general omission symbol stands for 5.

Let's try some more!

Question 5.15

[Make sure the student is viewing the last five lines of braille on page 10.]

Answer 5.15

$$? = 2+2$$

The general omission symbol stands for 4.

$$? = 1+2$$

The general omission symbol stands for 3.

$$? = 0+3$$

The general omission symbol stands for 3.

$4+1 = ?$

The general omission symbol stands for 5.

$3+2 = ?$

The general omission symbol stands for 5.

Listen carefully and then braille what you hear. This time you will not number the problems. Use your line spacing key twice to move to the next line each time.

Let me know if you need for me to repeat what you should braille. I will repeat each equation as many times as you need.

Question 5.16

$$4 = 4$$

Answer 5.16

4 equals 4

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Question 5.17

$$2 = 2$$

Answer 5.17

2 equals 2

⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠⠠⠠

Question 5.18

$$2+2 = ?$$

Answer 5.18

2 plus 2 equals what number?

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠

Question 5.19

$$3+1 = ?$$

Answer 5.19

3 plus 1 equals what number?

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠ ⠠⠠

Question 5.20

$$5 = 1+4$$

Answer 5.20

5 equals 1 plus 4

Question 5.21

$$2 = 1+1$$

Answer 5.21

2 equals 1 plus 1

Question 5.22

$$3 = 1+2$$

Answer 5.22

3 equals 1 plus 2

Figure 1 shows four 3x3 dot patterns. Pattern (a) has 6 dots: (1,1), (1,2), (2,1), (2,2), (2,3), and (3,2). Pattern (b) has 8 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,2), and (3,3). Pattern (c) has 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4). Pattern (d) has 12 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,4), (3,5), and (3,6).

Question 5.23

$$2+3 = 5$$

Answer 5.23

2 plus 3 equals 5

Question 5.24

$$1+3 = 4$$

Answer 5.24

1 plus 3 equals 4

Question 5.25

$$4+0 = ?$$

Answer 5.25

4 plus 0 equals what number

Part 6

Part 6 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Numbers Set and the Grid Board from the APH Hundreds Board and Manipulatives Kit (Alternatives: 1-inch graph paper or graphic art tape and braille paper to create a Grid Board or flashcards, Velcro, and a large piece of construction paper to create the charts).
- GK-Posttest-Data-Table.docx

Part 6 Teacher Script

Question 6.1

Count aloud to 100, beginning with 1.

Answer 6.1

The braille version of this answer has been split across 14 lines to accommodate for 32 cell braille displays.

Numbers 1 to 100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60

61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100

Question 6.2

Use the Grid Board to create a braille chart from 1 to 100. Once you finish building your braille chart, read the numbers from 1 to 100 on the chart.

Answer 6.2

The numbers 1 to 100 should be placed consecutively on the Grid Board, beginning in the top row:

1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100

Question 6.3

Skip count by 10s to 100, using the chart that you just created.

Answer 6.3

10 20 30 40 50 60 70 80 90 100

Question 6.4

Find the following numbers on the braille chart that you created:

57 13 90 65 35 100 5 42

81 79 61 24 73 18 46

86 77 52 97 68 33 29

Answer 6.4

The student should point to the following numbers on the Grid Board:

57 13 90 65 35 100 5 42

81 79 61 24 73 18 46

86 77 52 97 68 33 29

Question 6.5

Use your braille chart and count to 100 beginning with the following numbers:

28 61 55 93 74 89

Answer 6.5

Hundreds chart numbers 28 to 100

28 29 30

31 32 33 34 35 36 37 38 39 40

41 42 43 44 45 46 47 48 49 50

51 52 53 54 55 56 57 58 59 60

61 62 63 64 65 66 67 68 69 70

71 72 73 74 75 76 77 78 79 80

81 82 83 84 85 86 87 88 89 90

91 92 93 94 95 96 97 98 99 100

Hundreds chart numbers 61 to 100

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Hundreds chart numbers 55 to 100

					55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	
71	72	73	74	75	76	77	78	79	80	
81	82	83	84	85	86	87	88	89	90	
91	92	93	94	95	96	97	98	99	100	

Hundreds chart numbers 93 to 100

93 94 95 96 97 98 99 100

Hundreds chart numbers 74 to 100

					74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90		
91	92	93	94	95	96	97	98	99	100		

Hundreds chart numbers 89 to 100

89 90

91 92 93 94 95 96 97 98 99 100

Question 6.6

Use your braille chart and skip count by 10 through the last row in the chart, beginning with the following numbers:

34 59 11 68 45 27

Answer 6.6

34 44 54 64 74 84 94

59 69 79 89 99

11 21 31 41 51 61 71 81 91

68 78 88 98

45 55 65 75 85 95

27 37 47 57 67 77 87 97

Question 6.7

Turn to page 11 and read the numbers 51-100. Beware they are not in order.

[Make sure the student is viewing the eight lines of braille on page 11.]

Answer 6.7

75 53 57 85 61 96 74
90 72 58 56 94 59 64
71 97 100 86 92 78 54
80 73 60 89 77 84 66
99 88 79 93 67 83 91
81 95 62 70 98 82 87
55 65 76 51 68 69 52
63

Listen as I read each math problem, and then use your chart to answer the question.

Question 6.8

What number is one less than 80?

Answer 6.8

79

Question 6.9

What number is one more than 94?

Answer 6.9

95

Question 6.10

What number is one less than 59?

Answer 6.10

58

Question 6.11

What number is one more than 89?

Answer 6.11

90

Question 6.12

What number is one less than 76?

Answer 6.12

75

Question 6.13

What number is one less than 100?

Answer 6.13

99

Question 6.14

What number is one more than 37?

Answer 6.14

38

Question 6.15

What number is one more than 65?

Answer 6.15

66

Question 6.16

What number is one less than 29?

Answer 6.16

28

Question 6.17

What number is one more than 93?

Answer 6.17

94

Part 7

Part 7 Materials

- Student Braille Document: GK-Posttest-Student.brf
- Five and ten frames available in braille within the curriculum (Alternative: APH Tactile Five and Ten Frames)
- Counting bears placed in a bowl (Alternatives: different objects, Unifix cubes, base ten unit blocks)
- Pennies (Alternatives: APH Tactile Tokens, magnetic counters)
- Work tray (Alternatives: cookie sheet or magnetic board)
- Optional: nonslip surface such as a rubber shelf liner or magnetic board to place the five and ten frames on
- Braillewriter
- Braille paper
- GK-Posttest-Data-Table.docx

Part 7 Teacher Notes

- The Tactile Tokens from APH fit perfectly into the five and ten frames and the two textures can represent the two addends.
- You can also use the shapes and line segments from the Picture Maker Wheatley Tactile Diagramming Kit to create the five and ten frames.

Part 7 Teacher Script

You may use your counting bears to help you.

Question 7.1

Ricardo has 3 candy bars. He gave 1 candy bar to his grandparents. How many candy bars does Ricardo have now?

Answer 7.1

2

Question 7.2

There were 5 crayons in a box. Sherry is using 3 of the crayons. How many crayons are left for Mike to use?

Answer 7.2

2

Place the counting bears back in the bowl. Use your five frame, pennies, and work tray for the next two problems.

Question 7.3

There are 4 ducks swimming in the pond. Two ducks swam away. How many ducks are swimming in the pond now?

Answer 7.3

2

Question 7.4

Two boys are sitting in the school cafeteria. One boy went outside to play on the slide. How many boys are in the cafeteria now?

Answer 7.4

1

Put away your five frame. Then solve the following two word problems using the ten frame and pennies by yourself. You will tell me the answer.

Question 7.5

Zena found 6 starfish on the beach. She shared 3 of the starfish with her friend. How many starfish does she have now?

Answer 7.5

3

Question 7.6

Mary found 8 tomatoes on a plant in her garden. She picked 3 of them. How many tomatoes are left on the plant?

Answer 7.6

5

Question 7.7

Turn to page 12 and silently read each line of braille, beginning at the top of the page. Then write the first three missing numbers in the list of missing numbers ranging from 0-20. Then use your line spacing key twice to move to the next line.

14, 15, 16, ...

Answer 7.7

17, 18, 19

Question 7.8

11, 12, ...

Answer 7.8

13, 14, 15

Question 7.9

6, 7, 8, ...

Answer 7.9

9, 10, 11

Question 7.10

 $2, 3, 4, \dots$

Answer 7.10

5, 6, 7

Move your hands down and continue reading the lines of braille silently. Then use a braille hundreds chart to verbally identify the first three missing numbers in the pattern of numbers represented by the ellipsis.

Question 7.11

[Make sure the student is viewing the fifth line of braille on page 12.]

41, 42, 43, 44, ...

Answer 7.11

45, 46, 47

Question 7.12

[Make sure the student is viewing the sixth line of braille on page 12.]

52, 53, 54, ...

Figure 1 shows four 5x5 dot patterns labeled A, B, C, and D. Pattern A has 12 dots. Pattern B has 14 dots. Pattern C has 16 dots. Pattern D has 10 dots.

Answer 7.12

55, 56, 57

Question 7.13

[Make sure the student is viewing the seventh line of braille on page 12.]

85, 86, 87, 88, ...

Answer 7.13

89, 90, 91

Question 7.14

[Make sure the student is viewing the last line of braille on page 12.]

94, 95, 96, ...

Answer 7.14

97, 98, 99

Question 7.15

Turn to page 13 and read the equations.

The figure shows a 4x4 grid of 16 dot patterns. Each pattern is a 4x4 grid of dots, with some dots filled (black) and others empty (white). The patterns represent different configurations of a 4x4 grid, likely related to the 24 patterns mentioned in the text.

Answer 7.15

The student should read: number 1: 5 minus 1 equals what number, number 2: 4 minus 3 equals 1, number 3: 5 minus 2 equals what number, number 4: 3 minus 1 equals 2, and number 5: 2 minus 0 equals what number.

1. $5-1 = ?$
2. $4-3 = 1$
3. $5-2 = ?$
4. $3-1 = 2$
5. $2-0 = ?$

Listen carefully and then braille what you hear. You will number the problems. Use your line spacing key twice to move to the next line.

Let me know if you need for me to repeat what you should braille. I will repeat each equation as many times as you need.

Question 7.16

1. $2^{-1} = ?$

Answer 7.16

Number 1: 2 minus 1 equals what number

Question 7.17

2. $4-3 = ?$

Answer 7.17

Number 2: 4 minus 3 equals what number

Question 7.18

3. $5-2 = ?$

Answer 7.18

Number 3: 5 minus 2 equals what number

Question 7.19

4. $2-2 = ?$

Answer 7.19

Number 4: 2 minus 2 equals what number

Question 7.20

5. $3-0 = ?$

Answer 7.20

Number 5: 3 minus 0 equals what number

Let's try a few more. This time you will not number your problems. However, continue to use your line spacing key twice to move to the next line.

Question 7.21

$$5-3 = ?$$

Answer 7.21

5 minus 3 equals what number

Question 7.22

$$3-2 = ?$$

Answer 7.22

3 minus 2 equals what number

Question 7.23

$$0-0 = ?$$

