

Kindergarten Module 6

Subtraction, Geometry, and the Ellipsis

Check-Up 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 check-up be completed across two or more sessions.

Part 1

Part 1 Materials

- Student Braille Document: GK-M6-Check-Up-Student.brf
- Five frame (Alternative: Tactile Five and Ten Frames from American Printing House for the Blind [APH])
- Counting bears placed in a bowl (Alternatives: different objects, Unifix cubes, base ten unit blocks)
- Pennies (Alternatives: APH Tactile Tokens, magnetic counters)
- Work tray (Alternative: cookie sheet)
- Optional: nonslip surface such as a rubber shelf liner or magnetic board to place the five frame on
- GK-M6-Check-Up-Data-Table.docx

Part 1 Teacher Note

The five frame is available in braille within the curriculum. The Tactile Tokens from APH fit perfectly into the five frame and the token can be flipped to the second texture to represent what is being taken away. You can also use the shapes and line segments from the Picture Maker Wheatley Tactile Diagramming Kit to create the five frame.

Part 1 Teacher Script

Use your counting bears with the first two problems.

Question 1.1

Susan had 4 pieces of gum. She gave 2 pieces of gum to a friend. How many pieces of gum does Susan have now?

Answer 1.1

2

Question 1.2

Connor loves chicken nuggets. His mother gave him 4 chicken nuggets, and he ate 3 of the nuggets. How many chicken nuggets does Connor have now?

Answer 1.2

1

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

Question 1.3

There are 3 ducks swimming in the pond. One duck swam away. How many ducks are swimming in the pond now?

Answer 1.3

2

Question 1.4

Five birds were sitting on a tree branch. Four flew away. How many birds are left on the tree?

Answer 1.4

1

Question 1.5

Let's move to the braille document now. There is just one symbol on the third 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 plus sign in the fourth line of braille.

Answer 1.5

The student should point to the item at the end of the line.

Question 1.6

Find the minus sign in the fifth line of braille.

Figure 1 shows a 3x3 grid of dot patterns. The first two rows show a 3x3 grid of dots with the center dot missing. The third row shows a 3x3 grid of dots with the center dot missing, but the bottom row of dots is replaced by a single dot in the center.

Answer 1.6

The student should point to the item in the middle of the line.

Question 1.7

Find the equals sign in the sixth line of braille.

Answer 1.7

The student should point to the item toward the middle of the line.

Question 1.8

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

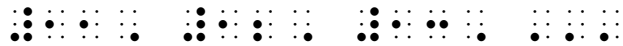
Answer 1.8



The student should point to the item at the beginning of the line.

Question 1.9

Find the mathematical commas in the eighth line of braille. There will be more than one mathematical comma.



Answer 1.9



The student should point to the last cell in the first three items listed.

Question 1.10

Find the ellipsis in the last line of braille.



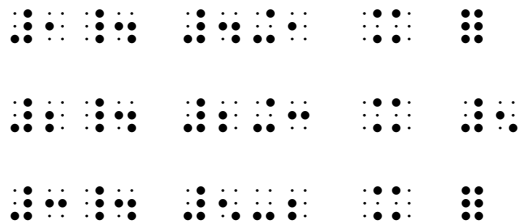
Answer 1.10



The student should point to the last item in the line composed of three braille cells.

Question 1.11

Now turn to page 2 and read the numbered problems.



Answer 1.11

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

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

Question 1.12

Move your hands down to the next line of braille and let's try some more!

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

Figure 1 consists of four 3x3 grids, labeled (a), (b), (c), and (d), each representing a possible distribution of children across three families. The dots are arranged as follows:

- (a) 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,3).
- (b) 11 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,3), (3,3).
- (c) 12 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,3), (3,3), (3,3).
- (d) 13 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,3), (3,3), (3,3), (3,3).

Figure 1 consists of four 3x3 grids, labeled (a), (b), (c), and (d), each containing black dots. The dots are arranged in a 3x3 grid, with the top row having 1 dot, the middle row having 2 dots, and the bottom row having 3 dots. The dots are arranged in a 3x3 grid, with the top row having 1 dot, the middle row having 2 dots, and the bottom row having 3 dots. The dots are arranged in a 3x3 grid, with the top row having 1 dot, the middle row having 2 dots, and the bottom row having 3 dots. The dots are arranged in a 3x3 grid, with the top row having 1 dot, the middle row having 2 dots, and the bottom row having 3 dots.

Answer 1.12

6. 1, 2, 3
7. 19, 20, ...
8. 15, 16, 17

9. 45, 46, ...

10. 8, 9, ...

Part 2

Part 2 Materials

- Braillewriter
- Braille paper
- GK-M6-Check-Up-Data-Table.docx

Part 2 Teacher Script

Listen and then braille what you hear. Don't forget to number your problems. Let me know if you need for me to repeat what you should braille.

Question 2.1

1. minus sign

Answer 2.1

Number 1: minus sign which is dots 3-6

⠠⠠⠠⠠⠠⠠

Question 2.2

2. equals sign

Answer 2.2

Number 2: equals sign which is dots 4-6, dots 1-3

⠠⠠⠠⠠⠠⠠

Question 2.3

3. general omission symbol

Answer 2.3

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

⠠⠨⠠⠨⠠⠨⠠⠨

Question 2.4

4. plus sign

Answer 2.4

Number 4: plus sign which is dots 3-4-6

⠠⠨⠠⠨⠠⠨⠠⠨

Question 2.5

5. ellipsis

Answer 2.5

Number 5: ellipsis which is dot 3, dot 3, dot 3

⠠⠨⠠⠨⠠⠨⠠⠨

Question 2.6

6. 3, 4, 5

Answer 2.6

Number 6: 3, 4, 5

⠠⠨⠠⠨⠠⠨⠠⠨

Question 2.7

7. 16, 17, ...

Answer 2.7

Number 7: 16, 17, ...

⠠⠨⠠⠨⠠⠨⠠⠨

Question 2.8

8. 5, 6, 7, ...

Answer 2.8

Number 8: 5, 6, 7, ...

⠠⠨⠠⠵ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠

Question 2.9

9. 13, 14, 15, ...

Answer 2.9

Number 9: 13, 14, 15, ...

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠

Listen carefully and then braille what you hear. This time you will not number the problems. 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 2.10

2-0 = ?

Answer 2.10

2 minus 0 equals what number

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠

Question 2.11

4-2 = ?

Answer 2.11

4 minus 2 equals what number

⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠ ⠠⠠

Question 2.12

$$5-3 = ?$$

Answer 2.12

5 minus 3 equals what number

Question 2.13

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

Answer 2.13

2 minus 1 equals what number

Question 2.14

$$3-0 = ?$$

Answer 2.14

3 minus 0 equals what number

Let's try a few more. Listen carefully as some will be subtraction problems and some will be addition problems.

Question 2.15

$$2-2 = ?$$

Answer 2.15

2 minus 2 equals what number

Question 2.16

$3-2 = ?$

Answer 2.16

3 minus 2 equals what number

Question 2.17

 $0+5 = ?$

Answer 2.17

0 plus 5 equals what number

Question 2.18

 $3+1 = ?$

Answer 2.18

3 plus 1 equals what number

Question 2.19

$$1-1 = ?$$

Answer 2.19

1 minus 1 equals what number

Part 3

Part 3 Materials

- Student Braille Document: GK-M6-Check-Up-Student.brf
- Braillewriter
- Braille paper
- GK-M6-Check-Up-Data-Table.docx

Part 3 Teacher Script

Question 3.1

Let's return to your braille document. Read the equations at the top of page 3 and then tell me what number the general omission symbol stands for each time.

5 - 2 = ?

4 - 3 = ?

1 - 0 = ?

2 - 1 = ?

4 - 1 = ?

Answer 3.1

Number 1: 5 minus 2 equals what number?
The general omission symbol stands for 3.

Number 2: 4 minus 3 equals what number?
The general omission symbol stands for 1.

Number 3: 1 minus 0 equals what number?
The general omission symbol stands for 1.

Number 4: 2 minus 1 equals what number?
The general omission symbol stands for 1.

Number 5: 4 minus 1 equals what number?
The general omission symbol stands for 3.

Question 3.2

Move your hands down to the next line of braille and continue reading the equations and telling me what number the general omission symbol stands for each time.

5 - 2 = ?

4 - 3 = ?

[illegible]

Answer 3.2

Number 6: 5 minus 4 equals what number?
The general omission symbol stands for 1.

Number 7: 3 minus 0 equals what number?
The general omission symbol stands for 3.

Number 8: 2 minus 0 equals what number?
The general omission symbol stands for 2.

Number 9: 0 minus 0 equals what number?
The general omission symbol stands for 0.

Number 10: 5 minus 3 equals what number?
The general omission symbol stands for 2.

Question 3.3

Let's try some more on page 4. Read carefully as some will be subtraction problems and some will be addition problems.

Answer 3.3

Number 11: 2 plus 2 equals what number?
The general omission symbol stands for 4.

Number 12: 4 minus 4 equals what number?
The general omission symbol stands for 0.

Number 13: 3 minus 1 equals what number?
The general omission symbol stands for 2.

Number 14: 1 plus 4 equals what number?
The general omission symbol stands for 5.

Number 15: 3 plus 1 equals what number?
The general omission symbol stands for 4.

Number 16: 3 minus 2 equals what number?
The general omission symbol stands for 1.

Question 3.4

Turn to page 5. Then locate the ellipsis in each line of braille and write the first three missing numbers in the list of missing numbers ranging from 0-20. Remember to number your problems.

1. 4, 5, ...

2. 13, 14, ...

3. 7, 8, 9, ...

4. 15, 16, 17, ...

5. 79, 80, 81

6. 25, 26, 27

7. 88, 89, 90

8. 53, 54, 55

Part 4

Part 4 Materials

- Work tray with a two-section divider
- Twelve two-dimensional shapes – 3 circles, 3 triangles, 3 rectangles, and 3 squares which can be found in the following APH kits:
 - APH MathBuilders, Unit 1: Matching, Sorting, and Patterning Kit
 - APH MathBuilders, Unit 6: Geometry Kit
 - APH Focus in Math Kit
 - Feel 'n Peel Sheets: Carousel of Textures has a variety of non-adhesive backed textured paper that can be used to create shapes
- Ten frame (Alternative: APH Tactile Five and Ten Frames)
- Pennies (Alternatives: APH Tactile Tokens, magnetic counters)
- Work tray (Alternative: cookie sheet)
- Optional: nonslip surface such as a rubber shelf liner or magnetic board to place the ten frame on
- Braillewriter
- Braille paper
- GK-M6-Check-Up-Data-Table.docx

Part 4 Teacher Notes

- The orientation of the shapes in the first question should vary.
- 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?
- The ten frame is available in both uncontracted and contracted braille within the curriculum. The Tactile Tokens from APH fit perfectly into the ten frame and the tokens can be flipped so that the second texture can represent what is subtracted.
- Encourage the student to verbalize the process they use to solve each problem.

Part 4 Teacher Script

Question 4.1

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.

Answer 4.1

The student should respond with the correct name of each shape.

Tell me about each shape.

Question 4.2

circle

Answer 4.2

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

Question 4.3

triangle

Answer 4.3

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

Question 4.4

rectangle

Answer 4.4

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

Question 4.5

square

Answer 4.5

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.

Now, use the ten frame with pennies on the work tray to solve some problems. If you want to challenge yourself, write the equation and answer using your braillewriter and braille paper! Don't forget to number the problems! I know you can do it!

Question 4.6

Demetri found 9 seashells on the beach. He shared 3 of the shells with his sister. How many seashells does he have now?

Answer 4.6

6

Answer for Challenge Activity 4.6

The student should write: 9 minus 3 equals 6.

Question 4.7

There are 10 apples in the fruit bowl. Papa ate 4 of the apples. How many apples are left in the fruit bowl?

Answer 4.7

6

Answer for Challenge Activity 4.7

The student should write: 10 minus 4 equals 6.

Question 4.8

LaTrice collects rocks and fossils. She has 16 rocks and 7 fossils. She gave her best friend one of the fossils as a birthday gift. How many fossils does she have now?

Answer 4.8

6

Answer for Challenge Activity 4.8

The student should write: 7 minus 1 equals 6.

Question 4.9

Six friends sat on a bench and ate ice cream. Two of the friends finished their ice cream and went to play on the rock climbing wall. How many friends are now sitting on the bench?

Answer 4.9

4

Answer for Challenge Activity 4.9

The student should write: 6 minus 2 equals 4.

Question 4.10

The library has 8 books about trains in the children's section. Robert loves to read books, especially books about trains. He checked out 5 of the books about trains. How many books about trains are left at the library?

Answer 4.10

3

Answer for Challenge Activity 4.10

The student should write: 8 minus 5 equals 3