

# **Kindergarten Module 5**

## **Introduction to Addition and the Braille**

### **Hundreds Chart**

### **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-M5-Check-Up-Student.brf
- Braillewriter
- Braille paper
- Five and ten frames (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 and ten frame on
- GK-M5-Check-Up-Data-Table.docx

### **Part 1 Teacher Note**

The five and ten frames are available in braille within the curriculum. 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 1 Teacher Script

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

### Question 1.1

One bear sat on the grass in the national park. Two more bears walked out of a cave and sat down on the grass. How many bears are sitting on the grass now?

Answer 1.1

3

### Question 1.2

Three dogs were walking in the park. Two more dogs have come to the park and are walking in the park. How many dogs are walking in the park now?

Answer 1.2

5

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

### Question 1.3

Begin by placing 2 pennies on the five frame. How many more pennies are needed to make 5?

Answer 1.3

3

### Question 1.4

Remove the pennies from the five frame and place them back in the work tray. Now place 4 pennies on the five frame. How many more pennies are needed to make 5?

Answer 1.4

1

### Question 1.5

Use your five frame and show me 3 different ways to make 5.

Answer 1.5

There are several possible correct responses, including  $0+5$ ;  $1+4$ ;  $2+3$ ;  $3+2$ ;  $4+1$ ; and  $5+0$ .

This time you will need your ten frame, pennies, and work tray.

### Question 1.6

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

Answer 1.6

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 1.7

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.

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Answer 1.7

⠠

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

### Question 1.8

Find the equals sign in the fifth line of braille.

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Answer 1.8

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The student should point to the equals sign in the middle of the line.

### Question 1.9

Now read the equations on the remaining five lines of braille on the page.

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Answer 1.9

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

$$5 = 5$$

$$2 = 2$$

$$0 = 0$$

$$4+1 = 5$$

$$0+5 = 5$$

### Question 1.10

Turn to page 2, and let's try some more!

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

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Answer 1.10

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

$$4 = 1+3$$

$$3 = 1+2$$

$$2+2 = 4$$

$$2 = 1+1$$

$$1 = 0+1$$

### Question 1.11

Now move your hands to the next line of braille. Then read the equations and tell me what number the general omission symbol stands for each time.

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

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Answer 1.11

$1+1 = ?$

The general omission symbol stands for 2.

? = 2+2

The general omission symbol stands for 4.

? = 4+0

The general omission symbol stands for 4.

$3+0 = ?$

The general omission symbol stands for 3.

$2+3 = ?$

The general omission symbol stands for 5.

### Question 1.12

Turn to page 3 and let's try reading five more problems!

Answer 1.12

$$? = 4 + 1$$

The general omission symbol stands for 5.

$$? = 1+2$$

The general omission symbol stands for 3.

$$? = 0+3$$

The general omission symbol stands for 3.

$1+4 = ?$

The general omission symbol stands for 5.

$3+2 = ?$

The general omission symbol stands for 5.

## Part 2

## Part 2 Materials

- Student Braille Document: GK-M5-Check-Up-Student.brf
- Braillewriter
- Braille paper
- GK-M5-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. equals sign

### Answer 2.1

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

## Question 2.2

2. plus sign

## Answer 2.2

Number 2: plus sign which is dots 3-4-6

### 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. 11, 12, 13

### Answer 2.4

Number 4: 11, 12, 13

### Question 2.5

5. 2, 3, 4

Answer 2.5

Number 5: 2, 3, 4

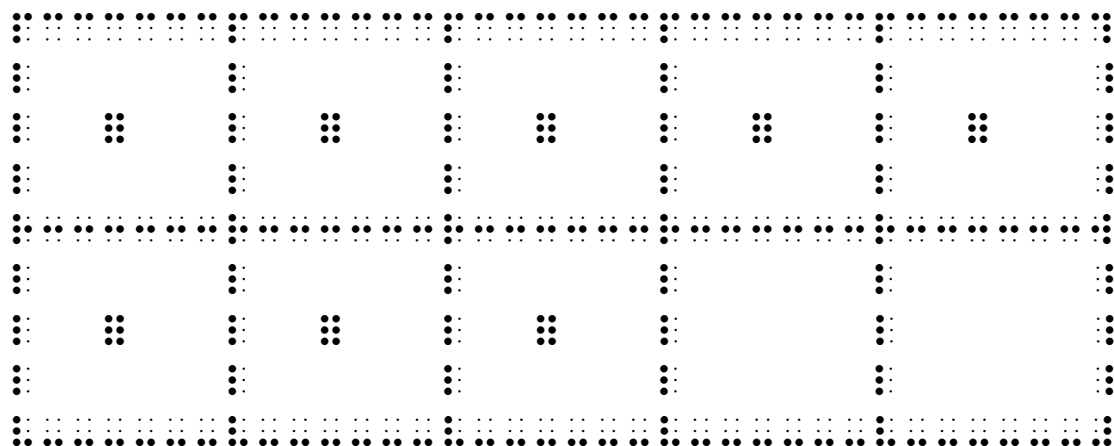
### Question 2.6

Let's return to your braille document. Turn to page 4 and find the ten frame at the top of the page.



6. How many more full braille cells are needed to make 10 in the ten frame?  
Don't forget to write your answer and number your problems.

[Ten frame with 8 full braille cells, including 5 full braille cells in the top row and 3 full braille cells in the bottom row]



Answer 2.6

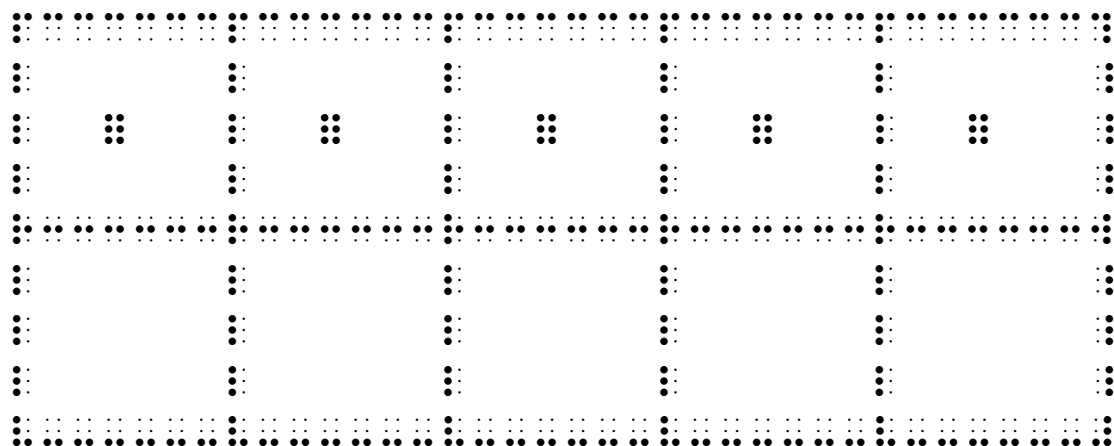
Number 6: 2



### Question 2.7

7. How many more full braille cells are needed to make 10 in the ten frame  
at the bottom of the page?

[Ten frame with 5 full braille cells, including 5 full braille cells in the top row and 0 full braille cells in the bottom row]





Answer 2.9

3 equals 3

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**Question 2.10**

4 = 4

Answer 2.10

4 equals 4

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**Question 2.11**

1 = 1

Answer 2.11

1 equals 1

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**Question 2.12**

5 = 5

Answer 2.12

5 equals 5

⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨

**Question 2.13**

2+2 = ?

Answer 2.13

2 plus 2 equals what number?

⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨

### Question 2.14

$3+0 = ?$

Answer 2.14

3 plus 0 equals what number?

### Question 2.15

$$5 = 0+5$$

Answer 2.15

5 equals 0 plus 5

### Question 2.16

$$4 = 3+1$$

Answer 2.16

4 equals 3 plus 1

### Question 2.17

$$2 = 1+1$$

Answer 2.17

2 equals 1 plus 1

### Question 2.18

$$3 = 1+2$$

Answer 2.18

3 equals 1 plus 2

### Question 2.19

$$2+3 = 5$$

Answer 2.19

2 plus 3 equals 5

### Question 2.20

$$1+3 = 4$$

Answer 2.20

1 plus 3 equals 4

[illegible]

### Question 2.21

$$1+0 = 1$$

Answer 2.21

1 plus 0 equals 1

## Part 3

## Part 3 Materials

- Student Braille Document: GK-M5-Check-Up-Student.brf
- APH Hundreds Board and Manipulatives Set, including the Numbers Set and the Grid Board (Alternatives: 1-inch tactile graph paper, graphic art tape used to arrange a grid on braille paper, Velcro pieces arranged in an array on construction paper with number flashcards)

- GK-M5-Check-Up-Data-Table.docx

### Part 3 Teacher Note

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

### Part 3 Teacher Script

#### Question 3.1

Count aloud to 100, beginning with 1.

Answer 3.1

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 3.2

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 3.2**

The numbers 1 to 100 should be placed consecutively on the Grid Board, beginning in the top row. The braille version of this answer has been split across 14 lines to accommodate for 32 cell braille displays.

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 3.3**

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

**Answer 3.3**

10 20 30 40 50 60 70 80 90 100

**Question 3.4**

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

37 49 58 90 35 65 42 9 100  
21 73 86 14 75 53 97 83 68

**Answer 3.4**

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

37 49 58 90 35 65 42 9 100

21 73 86 14 75 53 97 83 68

**Question 3.5**

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

45 67 59 94 78

**Answer 3.5**

Hundreds chart numbers 45 to 100

					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 67 to 100

							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 59 to 100

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 94 to 100

94 95 96 97 98 99 100

Hundreds chart numbers 78 to 100

78 79 80

81 82 83 84 85 86 87 88 89 90

91 92 93 94 95 96 97 98 99 100

### Question 3.6

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

23 37 59 12 68 45

### Answer 3.6

23 33 43 53 63 73 83 93

37 47 57 67 77 87 97

59 69 79 89 99

12 22 32 42 52 62 72 82 92

68 78 88 98

45 55 65 75 85 95

### Question 3.7

Turn to page 6 in your braille document and read the numbers from 1-50. There will be 4 numbers on each line.

[Make sure the student is viewing the first six lines of braille.]

### Answer 3.7

47 8 36 24

11 39 50 33

49 31 14 28

43 27 45 38

46 6 42 40

35 29 48 18

### Question 3.8

Move your hands down to the next line of braille and then read the numbers from 51-75. There will be 4 numbers on each line.

[Make sure the student is viewing the remaining three lines of braille on page 6.]

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Answer 3.8

75 53 61 59

66 70 72 58

56 60 64 71

### Question 3.9

Turn to page 7 and read the numbers from 76-100. There will be 4 numbers on each line.

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Answer 3.9

97 100 86 78

93 80 99 88

79 83 84 91

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

### Question 3.10

What number is one less than 90?

Answer 3.10

89

**Question 3.11**

What number is one more than 74?

Answer 3.11

75

**Question 3.12**

What number is one less than 49?

Answer 3.12

48

**Question 3.13**

What number is one more than 83?

Answer 3.13

84

**Question 3.14**

What number is one less than 66?

Answer 3.14

65

**Question 3.15**

What number is one less than 71?

Answer 3.15

70

**Question 3.16**

What number is one more than 37?

Answer 3.16

38

### **Question 3.17**

What number is one more than 45?

Answer 3.17

46

### **Question 3.18**

What number is one less than 29?

Answer 3.18

28

### **Question 3.19**

What number is one more than 93?

Answer 3.19

94

## **Part 4**

### **Part 4 Materials**

- Braillewriter
- Braille paper
- Ten frame (Alternative: APH Tactile Five and Ten Frames)
- Pennies (Alternatives: APH Tactile Tokens, magnetic counters)
- Work tray (Alternatives: cookie sheet)
- Optional: nonslip surface such as a rubber shelf liner or magnetic board to place the ten frame on
- GK-M5-Check-Up-Data-Table.docx

### **Part 4 Teacher Notes**

- 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 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.
- Encourage the student to verbalize the process they use to solve each problem.

## Part 4 Teacher Script

Solve the following five word problems using the ten frame and pennies by yourself. If you want to challenge yourself, write the equation too!

### Question 4.1

There are 3 bananas and 6 oranges in the bowl. How many pieces of fruit are in the bowl altogether?

### Answer 4.1

9

## Answer for Challenge Activity 4.1

The student should write: 3 plus 6 equals 9.

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), (1,3), (2,1), (2,2), (2,3), (3,1). Pattern (c) has 8 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2). Pattern (d) has 9 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3).

### Question 4.2

Cara went on a nature walk. She found 4 leaves and 5 pines cones. How many things did she find on the nature walk?

Answer 4.2

9

## Answer for Challenge Activity 4.2

The student should write: 4 plus 5 equals 9.

### Question 4.3

Mike had 2 red apples, and Victor had 8 green apples. How many apples do Mike and Victor have?

### Answer 4.3

10

## Answer for Challenge Activity 4.3

The student should write: 2 plus 8 equals 10.

### Question 4.4

Four friends sat on a bench and ate ice cream. Two more friends came to sit on the bench. How many friends are now sitting on the bench?

#### Answer 4.4

6

## Answer for Challenge Activity 4.4

The student should write: 4 plus 2 equals 6.

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 5 dots: (1,2), (1,3), (2,2), (3,2), (3,3). Pattern (c) has 7 dots: (1,1), (1,2), (1,3), (2,2), (2,3), (3,2), (3,3). Pattern (d) has 8 dots: (1,1), (1,2), (1,3), (2,2), (2,3), (3,2), (3,3), (3,1).

### Question 4.5

Lots of animals live on the farm. In addition to a horse and a cow, there are 5 chickens and 2 goats. How many goats and chickens live on the farm?

Answer 4.5

7

## Answer for Challenge Activity 4.5

The student should write: 5 plus 2 equals 7.