

# Pre-Kindergarten – 1<sup>st</sup> Grade Students: Nemeth Code within UEB Contexts and Strategies for Supporting the Student in Building Math Skills

## Lesson 3: Multiple Choice Problems and Spatial Problems



University of South Carolina Upstate, Spring 2020

# Lesson 3

Participants will be able to:

1. Read and write tally marks
2. Read and write problems with multiple choice answers
3. Read and write spatial problems

# Tally Marks

- Tally marks ∴ are written with dots 4-5-6.
- Put a space after each group of 5 tally marks in Nemeth Code.

∴ ∴ ∴ ∴ ∴ ∴ ∴ 7

∴ ∴ ∴ 3

∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ ∴ 14

# Multiple Choice Answers Using the English Letter Indicator

- The English letter indicator is ⠠ (dots 5-6) and, like the Grade 1 indicator in UEB, it lets the braille reader know that what follows is a letter and not a contraction.
- In Nemeth Code when using letters for problem choices, place an English letter indicator in front of each letter (including a, i, and o).
- Follow the print for capitalization and punctuation of letters for multiple choice answers.
- Format multiple choice questions by beginning the question in cell 1 with runover in cell 5.
- Answer choices begin in cell 3 with runover in cell 5.

# Capitalized Answer Choices

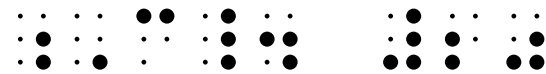
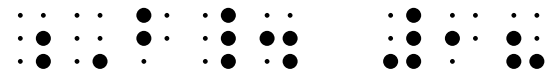
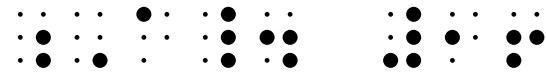
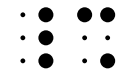
$$1.52 - \underline{\quad} = 34$$

A. 16

B. 18

C. 20

D. 28







# Activity 3A: Answer Key

1.  $7 + \underline{\quad} = 12$

⠠⠨

⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨

a. 6

⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨

b. 7

⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨

c. 5

⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨

d. 9

⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨ ⠠⠨



# Activity 3B

Braille the multiple choice problem below.

4. My cousins made cupcakes. Maria made 6 cupcakes, and Jorge made 3. Which equation shows how many cupcakes they made altogether?

a.  $6 + 3 = 8$

b.  $3 + 8 = 11$

c.  $6 + 3 = 10$

d.  $6 + 3 = 9$



# Spatial Problems







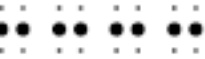


- Numbers must align in vertical (spatial) problems.
- The addition or subtraction sign goes one cell to the left of the widest number above the separation line.
- The separation line  $\cdot\cdot\cdot\cdot$  (series of dots 2-5) is one cell longer on either side of the widest part of the problem.
- You must have a blank line above and below a spatial problem.

$$\begin{array}{r} 7 \\ - 6 \\ \hline \end{array}$$
  

Braille representation of the subtraction problem 7 - 6. The numbers 7 and 6 are in the first row. The minus sign is in the second row, one cell to the left of the 6. A horizontal separation line is in the third row. The numbers 7 and 6 are in the fourth row. The separation line is one cell longer on either side of the widest part of the problem, shown as a series of four dots in the fifth row.

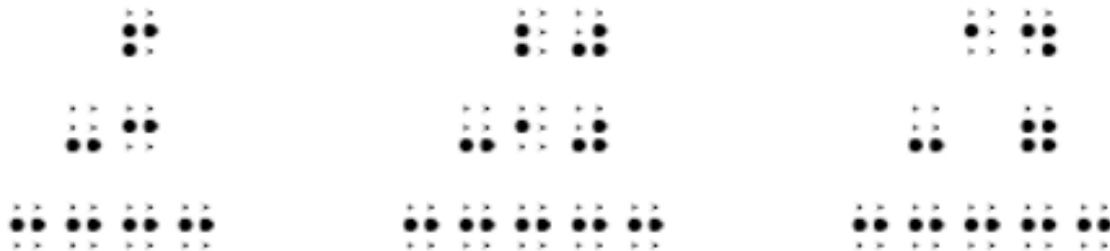
# Spatial Problems Across a Line

- You must have at least 1 cell between the separation lines of multiple problems on the same line.
- Some students may find it easier if there are 2 blank cells between the separation lines.

4	10	12
<u>- 2</u>	<u>- 3</u>	<u>- 6</u>
		
		
		

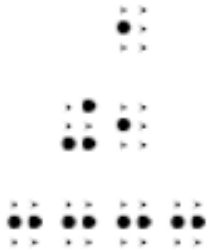
# Activity 3C

Interline the spatially aligned problems.

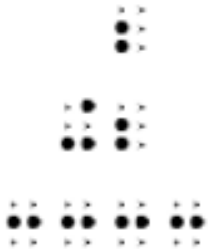


# Activity 3C: Answer Key

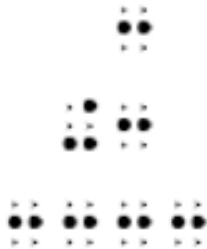
$$\begin{array}{r} 1 \\ +1 \\ \hline \end{array}$$



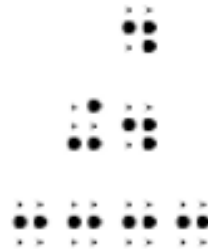
$$\begin{array}{r} 2 \\ +2 \\ \hline \end{array}$$



$$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ +4 \\ \hline \end{array}$$



# Activity 3C: Answer Key (continued)

$$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ -10 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$$

