An Introduction to UEB Math/Science for Pre-Kindergarten – 1st Grade Students and Strategies for Supporting Math Learning

Lesson 4: Formatting Materials for Students in the Early Grades



University of South Carolina Upstate, Fall 2023





### Resources to Use in Formatting Materials for Young Students

- Braille Formats: Principles of Print-to-Braille Transcription, 2016 referred to as "Braille Formats."
  - <u>http://brailleauthority.org/formats/formats2016.html</u>
- BANA Guidelines for the Transcription of Early Educational Materials from Print to Braille
  - <u>https://www.brailleauthority.org/early-learning-materials</u>
- Both of these resources are available from the Braille Authority of North America (BANA) and are available in print and braille. Although written for transcribers, TSVIs need to understand many of the concepts explained.

# Line Spacing

- Double-space materials for young learners.
- Exceptions, single space:
  - Puzzles
  - Spatially aligned problems
  - Tables
  - Titles of tactile graphics





# Centered Headings

- Center the title of a worksheet.
- Place the title on the first line of the page, and leave two blank lines after the heading.
- Divide long headings across multiple lines.
- Follow print capitalization when brailling headings.
- Changes in typeform that are just "pretty" are not needed in braille.

### 7

# How to Center a Heading

- Begin by counting the number of cells needed to transcribe the title in braille.
- Count:
  - Letters
  - Contractions
  - Spaces
  - Punctuation
  - Indicators (e.g., capital indicator)
- Subtract the number of cells needed for the title from the number of cells in a line (usually either 32 or 40).
- Divide the difference by 2 and then begin in this cell.

# Example of a Centered Heading (continued)

Addition Practice										
Add.										
3	1	2	0							
+ 2	+ 0	+ 2	+ 3							

- The title is centered.
- Two blank lines follow the title.
- Notice only 1 blank line is needed after the directions.
- Print capitalization is followed.

		:	::		::		:				ŀ	•:	::		::			
						:	•	•	:					•				
	:	•	:	:	•													
		::						•::					•				•	
•					ł	i				•	i				•	i		
		••						•				•	••				••	

# Activity 4A

Decide if each statement is true or false.

- 1. The title of a worksheet always begins in cell 5.
- 2. Long titles can be divided across two or even three lines when necessary.
- 3. Follow print capitalization when brailling headings for a kindergarten student.
- 4. Most materials for students in first grade are triple-spaced.

9







# Directions Preceding Numbered Problems

Comparing Numbers
Write $>$ , $<$ , or = in the blank.
1. 79 57
2. 15 21
3. 32 36
4. 90 13

- When directions precede numbered problems, they begin in cell 5 with runover lines beginning in cell 5.
- There are two blank lines between the title and directions.
- There is only one blank line after the directions.





Numbered Problem	with Answer Choices
1. 7 + = 12 a. 6	
b. 7 c. 5	
d. 9 • Begin problem in cell 1	
<ul> <li>with runover in cell 5.</li> <li>Answer choices begin in</li> </ul>	
cell 3 with runover in cell 5.	
	1

# Example of a Numbered Problem with Answer Choices

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

# Example of a Numbered Problem with Answer Choices (continued)

		· · · · •	•••			••	•••	•	•	•••		•••	•:	•••	•••		••	•••	
		•••	•:	::	•••			•		••	•••	:	••	•:	•••	•••	•	•	
			•••	•••		: : : •			•••	•	•••	•	:::	•		•••		•	
			• • • •		•••	•:	•••	•••		•:	•••	•	•••					•	Double space this problem for a
•:	•••		:	•••	:•	•••		••		:•	::			•••					young student. This example is
: : : • : •	•	•••		:	••	:•	::	:	•••		•••	::			• •	• :			not double spaced so the problem fits on the slide.
::	••	•••			•	•	•••		••		•	::			• •	•••		•	The problem begins in cell 1 with
: : : •	::	•••			•	:•	•••		••		•	::		:::	•••				runovers in cell 5.
																		•	Answer choices begin in cell 3.

17

# Numbered Spatial Problems Across a Line

- BANA does not have established rules about how to space spatial problems across a line in UEB Math/Science.
- The Project INSPIRE team recommends leaving 2 blank cells between problems for students in PK-1<sup>st</sup> grade.
- Use consistent spacing for spatial problems on the entire worksheet or test.
- Be sure the student can distinguish the problem number from the content of the problem.
- Be consistent in placement of the problem numbers, so that the student can find them.
- Remember to leave a blank line above and below each row of spatial problems.





### Numbered Spatial Problems Across a Line – Alternate Numeric Passage Layout

```
....
           ....
   .
     •
        .....
  .....
              ....
  ....
        ....
              ....
....
   •••••
  H II - H
      ....
  . .. .. ..
         . .. .. ..
               .....
```



The line above and below spatial calculation must either be blank, or must only contain the numeric passage indicator or terminator.

21

21

# Activity 4B

Transcribe the following worksheet using the layout of your choice.

Solve. 1. 5 2. 6 3. 8 +7 $+2$ $-14. 12 5. 13 6. 10$		Add or Subtra	ct	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Solve.			
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1. 5	2. 6	3. 8	
4. 12 5. 13 6. 10	+ 7	+ 2	<u> </u>	
4. 12 5. 13 6. 10				
4. 12 5. 15 6. 10	4 12	F 13	c 10	
	4. 12	5. 15	6. 10	
- 3 - 4 + 6	- 3	- 4	+ 6	



# Activity 4B: Answer Key Layout 2

Add or Su	ubtract					
olve. 5 2.6 <u>+7</u> <u>+2</u>	3. 8 <u>-1</u>			i !! !!		
. 12 5. 13 <u>- 3 - 4</u>	6. 10 <u>+ 6</u>		:: :: :: :: :: :: ::	<b></b>	# * # #	• • • •
		<b>: :</b> :			<b></b>	
		:::				

# Braille Page Numbering You must leave 3 braille cells between the text on the line and the page number. The braille page number is placed at the end of the last line on each page. Braille page numbers are consecutive: 1, 2, 3, etc.





Activity 4C: Answer Key	
	dhe dheedh eu du
	ate atoeae on da
	dta dhoadh oa da
	SANGAS DE SZAMA SO 200 545
	96 2040 652CA
	dyn sad yn ys Henre I yn fone a
	d bide sed at it it ad item
	<b>1</b> 28

# Consistency Helps Students Navigate Braille Materials Easily and Quickly

- Be consistent in formatting materials, regardless of grade level.
- Depending on the needs of young students, teachers may elect to include a space before and after signs of operation in horizontal problems.
- Follow print formatting for spatial problems, including where signs of operation are placed. For example, if the plus sign is to the left of the second addend, braille the plus to the left of the second addend.

29

# Special Considerations

- When pre-kindergarten and kindergarten students are given pictures of objects to count, use manipulatives such as:
  - Counting bears
  - Base ten blocks
  - Digi-blocks
- Use simple tactile shapes (e.g. circles, squares) on worksheets.

# Interlining

- Interline braille material by writing above the braille.
- Interlining above the braille, allows the student's hands to be on the braille and the adult to see the print.

