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

Lesson 2: More Linear Problems, Word Problems, and Additional Signs of Omission

University of South Carolina Upstate, Fall 2023

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Lesson 2 Objectives

Participants will be able to:

1. Read and write linear math problems using the dash, underscore, or shape to represent a missing number, sign of operation, or sign of comparison.
2. Read and write math word problems.

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Review of the Question Mark and Visible Space as Signs of Omission

- The question mark is ⠦ (dots 2-3-6).
- The visible space symbol is ⠬ (dots 3-4-6), and it is used to represent a blank space in print, except when the answer to a problem is left blank.
- Follow print when a question mark or blank space in print shows a missing number, sign of operation, or sign of comparison.
- Space each sign of omission the same way you space what it replaces.

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Review of The Grade 1 Indicator

Use the Grade 1 indicator ⠰ (dots 5-6) to avoid confusion when a question mark is “standing alone”.

1. 5+5 = ?

⠼⠁⠲ ⠼⠑⠐⠖⠼⠑ ⠐⠶ ⠰⠦

35. 6 ? 10 12

⠼⠉⠑⠲ ⠼⠋ ⠰⠦ ⠼⠁⠚ ⠼⠁⠃

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More about the Grade 1 Indicator

When a math problem begins with a question mark or if a question mark is used after a sign of comparison, use the Grade 1 indicator.

1. ? – 5 = 63

2. 32 = ? + 17

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Activity 2A

Interline the problems. A sign of comparison is missing in the fourth problem.

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Activity 2A: Answer Key

1. ? + 106 = 120

⠼⠁⠲ ⠰⠦⠐⠖⠼⠁⠚⠋ ⠐⠶ ⠼⠁⠃⠚

2. 10 − 8 =

⠼⠃⠲ ⠼⠁⠚⠐⠤⠼⠓ ⠐⠶

3. 45 + 20 = ?

⠼⠉⠲ ⠼⠙⠑⠐⠖⠼⠃⠚ ⠐⠶ ⠰⠦

4. 18   36

⠼⠙⠲ ⠼⠁⠓ ⠬ ⠼⠉⠋

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Dash and Underscore as Signs of Omission

⠠⠤ dash (—) (dot 6, dots 3-6)

⠨⠤ underscore (___) (dots 4-6, dots 3-6)

7 + — = 10

⠼⠛⠐⠖⠠⠤ ⠐⠶ ⠼⠁⠚

___ −12 < 35

⠨⠤⠐⠤⠼⠁⠃ ⠈⠣ ⠼⠉⠑

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Shapes Used for Omission

- First determine if the shape is meaningful for the student (e.g., all odd answers are written in triangles; all even answers are written in circles).
- If shapes are needed, for young students use stickers or other textures to represent shapes such as squares, triangles, or circles.
- It is not best practice to replace the shape with a braille omission symbol.
- At this age, it is essential that students have multiple opportunities to tactually explore shapes.

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Example

7 = □ + 4

On the print worksheet a rectangle is drawn. The TSVI used a green sticker to represent the rectangle on the braille worksheet as the student has some usable vision.

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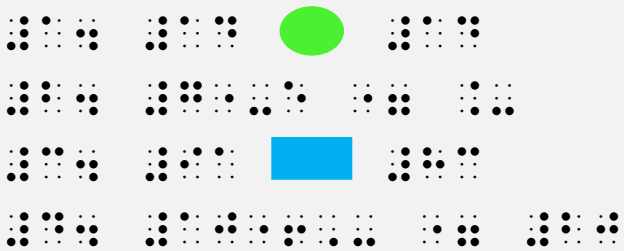
Activity 2B

Interline the problems.



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Activity 2B: Answer Key

1. 14 ● 14

2. 7 – 5 = ___

3. 91 ▬ 83

4. 10 + — = 20

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Activity 2C

Write the following problems in braille.

6. 8- — = 3

7. 4+5 = 

8. 10+0 = ___

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Activity 2C: Answer Key

6. 8- — = 3

⠼⠓ ⠼⠁⠚ ⠶ ⠼⠉

7. 4+5 = 

⠼⠙ ⠼⠑⠶ 

8. 10+0 = ___

⠼⠁⠚ ⠼⠚⠶ ⠼⠁⠚

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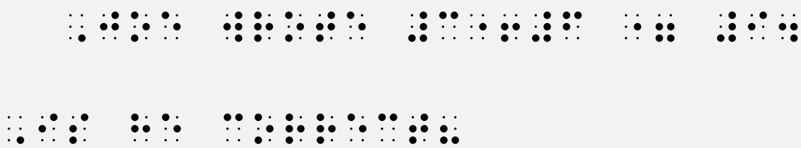
Reading and Writing Simple Word Problems

Double-space materials for Pre-Kindergarten, Kindergarten, and 1st grade students.

Joe wrote 3+6 = 9. Is he correct?



3 + 4 and 2 + 5 are equal.

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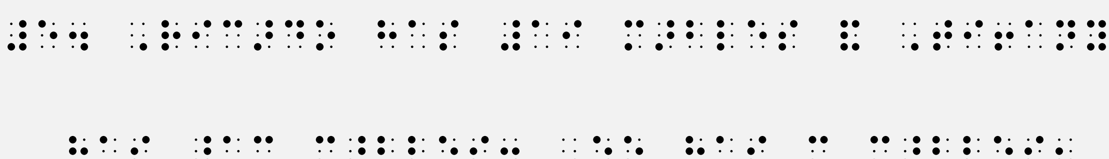
Numbered Simple Word Problem

Numbered problems begin in cell 1 with run-over lines in cell 3.

5. Ricardo has 19 marbles and Tiffany has 13 marbles. Who has more marbles?



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Activity 2D

Braille the following word problems:

1. How many tens are in 45?
2. What is the sum of 5, 10, and 15?
3. Which is more, 9 − 6 or 11 − 5?
4. Marcella wrote the answer 6 for 7 + ? = 13. Is she right?

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Activity 2D: Answer Key

1. How many tens are in 45?

⠠⠓⠕⠺ ⠍⠁⠝⠽ ⠞⠑⠝⠎ ⠁⠗⠑ ⠊⠝ ⠲⠢⠢⠲

2. What is the sum of 5, 10, and 15?

⠠⠓⠕⠺ ⠍⠁⠝⠽ ⠕⠋ ⠢⠂ ⠢⠚⠂ ⠯ ⠢⠑⠲ ⠠⠺⠓⠁⠞ ⠊⠎ ⠞⠓⠑ ⠎⠥⠍⠲

3. Which is more, 9 − 6 or 11 − 5?

⠠⠺⠓⠊⠉⠓ ⠊⠎ ⠍⠕⠗⠑⠂ ⠔⠊⠝⠑ ⠍⠊⠝⠥⠎ ⠋⠕⠥⠗ ⠕⠗ ⠑⠇⠑⠧⠑⠝ ⠍⠊⠝⠥⠎ ⠋⠊⠧⠑⠲

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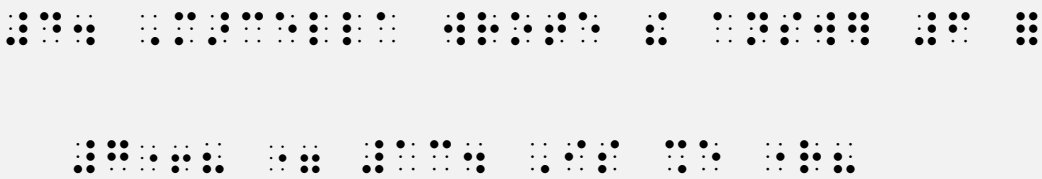
Activity 2D: Answer Key (Continued)

4. Marcella wrote the answer 6 for 7 + ? = 13. Is she right?



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