

An Introduction to Nemeth Code Symbols Used in Grades 2 to 5 and Strategies for Supporting Elementary Students in Building Math Skills

Lesson 3: Grouping Symbols and Superscripts



University of South Carolina Upstate, Summer 2020

Lesson 3 Objectives

- Participants will be able to read and write the Nemeth grouping symbols, including the parenthesis, bracket, and brace.
- Participants will be able to read and write the symbols for superscript (exponent), baseline indicator, and degree sign ($^{\circ}$).

Grouping Symbols

- ⋮ Left (open) parenthesis (dots 1-2-3-5-6)
- ⋮ Right (close) parenthesis (dots 2-3-4-5-6)
- ⋮ ⋮ Left (open) bracket ([) (dot 4, dots 1-2-3-5-6)
- ⋮ ⋮ Right (close) bracket (]) (dot 4, dots 2-3-4-5-6)
- ⋮ ⋮ Left (open) brace ({) (dots 4-6, 1-2-3-5-6)
- ⋮ ⋮ Right (close) brace (}) (dots 4-6, 2-3-4-5-6)

Grouping Symbols that Enclose Mathematical Material

- Transcribe grouping symbols in Nemeth Code.
- When a single number or mathematical expression is enclosed within grouping symbols, you **do not need** a numeric indicator.

(4)(6) ⠠⠠⠠⠠⠠⠠

(7)(.2) ⠠⠠⠠⠠⠠⠠⠠⠠

(3-2)(8+5) ⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠

Activity 3B

Transcribe the following problems:

1) $4[10-(8-5+4)] = \underline{\hspace{2cm}}$

2) $\{26-[(3+1)(2+3)]+14\} =$

3) $(\$2.75)(2) = \5.50

4) $(79.5)(3.62) = ?$

Superscript and Baseline Indicators

- A mathematical expression can contain symbols placed above the baseline.
- In braille, we use level indicators to identify whether the print symbols are above the baseline or on the baseline.
- Use the superscript indicator to indicate we are going up, and the baseline indicator to indicate a return to the baseline.
- A space also returns to the baseline.
 - ⠠ Superscript indicator (dots 4-5)
 - ⠠ Baseline indicator (dot 5)

Exponents

- The exponent of a number tells you how many times to multiply that number by itself.
- In print an exponent is written as a small number to the right and above the base number.
- In 3^2 the base number is the 3 and the exponent is the 2.
- 3^2 is written on the baseline, followed by the superscript indicator $\overset{\cdot\cdot}{\cdot}$ (dots 4-5), and then 2 $\overset{\cdot\cdot}{\cdot}$ (no numeric indicator).

3^2

- 3^2 can be read as:
 - 3 to the power of 2
 - 3 to the second power
 - 3 squared

Activity 3C

Transcribe the following problems:

1) 9^2

2) $(9)^2$

3) $9^2 + 3$

4) $4^5 - 3^6$

5) $(3^2)(5^4)$

6) $(2^3)^4$

Activity 3C: Answer Key

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Degree Sign

- The degree sign is an elevated hollow dot.
- It takes three cells to write the degree sign in Nemeth Code ⠠⠠⠠⠠⠠⠠ (dots 4-5, dots 4-6, dots 1-6).
- Since the degree sign is above the baseline, you begin with the superscript indicator ⠠⠠⠠⠠ (dots 4-5), followed by the dot configuration for a hollow dot ⠠⠠⠠⠠ (dots 4-6, dots 1-6).

70° ⠠⠠⠠⠠⠠⠠⠠⠠⠠

15° ⠠⠠⠠⠠⠠⠠⠠⠠⠠

Activity 3D

Transcribe the following:

(1) 45°

(2) 0° F

(3) 25° C.

(4) The boiling point for water is 212° F or 99.98° C.

