APPENDIX C
NEMETH CODE FORMAT SUMMARIES

Read about this PROVISIONAL EDITION in the front matter to this book. Check the NFB website periodically for updates to this appendix.

- General Principles
- “Keep Together”
- Margins
- Itemized Material
- Displayed Mathematical Material
- Division of Mathematical Expressions Between Braille Lines
- Placement of Code Switch Indicators

“Formatting” refers to layout on the page, such as indentations (margins), line spacing (blank lines), centering, and pagination. The Nemeth Braille Code for Mathematics and Science Notation specifies certain formats which are summarized in this appendix. For illustrative examples, go to the sections in this lesson material which are cited as bold numbers in brackets.

This is not the final version of this appendix. Format summaries will be added as the lessons advance. This edition covers lessons 1-8.

**General Principles**

When an item in a UEB transcription requires the use of Nemeth Code symbols, format rules of The Nemeth Braille Code for Mathematics and Science Notation are to be applied to the entire transcription including those portions transcribed in UEB. When a format is not specifically addressed in the Nemeth Code, the principles provided in Braille Formats Principles of Print-to-Braille Transcription should be followed. [1.7]

**“Keep Together”**

**Abbreviations:** An abbreviation and a preceding or following numeral or letter to which it applies must not be divided between braille lines. [4.4.1]

**Enclosed List:** Items in an enclosed list must not be divided between braille lines if the entire list will fit on a single braille line. If the enclosed list will not fit on a single braille line, use as much of the current line as possible and begin a runover line after a comma. [5.15.3]

**Hyphenated Expressions:** A hyphenated expression containing one or more mathematical components must not be divided between braille lines. [3.19]

**Mathematical Expressions:** A mathematical expression that will fit on one braille line within the current margins must not be divided between lines. The entire expression is brought down to the next line. [2.5] If a page number on line 25 or line 1 does not allow the entire expression to fit on the line, the expression is brought down to the next line that has enough usable cells. [4.7]
Margins

Nemeth Code formatting can be broken down into two major styles: indented and hanging. In the "indented" styles, the first line is indented two cells to the right of the runover margin. In the "hanging" styles, the first line begins two cells to the left of the runover margin, or four cells to the left of the runover margin.


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Instructions Preceding Unitemized Material (3-1): If instructional text is not followed by lettered or numbered exercise material, the text is considered to be a narrative paragraph and begins in cell 3 with runovers beginning in cell 1. The (5-5) style of “directions” given in Braille Formats does not apply in a transcription that contains Nemeth Code. [6.12.1]

Continuation of Narrative Following Displayed Material: Look for context clues in the print copy to determine if the narrative following a displayed mathematical expression is a new paragraph or if it is a continuation of the interrupted paragraph. Apply proper margins to the text accordingly. [8.25.2]

Margins: Itemized Material

Itemized Material with No Subdivisions (1-3): The identifier begins in cell 1; runovers begin in cell 3. If the material contains more than one paragraph, each subparagraph begins in cell 5 with runovers in cell 3. [2.16]

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Itemized Material with No Subdivisions—Side-by-Side Print Layout: When the print copy arranges itemized material side-by-side across the page and there are no subdivisions, the braille format is changed so that all identifiers start in cell 1. [3.20]

Itemized Material with Subdivisions (1-5; 3-5): The main item designation begins in cell 1, and its runovers begin in cell 5. Each lettered or numbered subdivision—regardless of print indentation—begin in cell 3, with any runovers in cell 5. [7.18]

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Itemized Material with Subdivisions with More Than One Paragraph (7-5): If a main item or a subdivision has more than one paragraph, each new paragraph begins in cell 7, and its runovers begin in cell 5. [7.18.1]

<table>
<thead>
<tr>
<th>Itemized Material with Subdivisions—Side-by-Side Braille Layout Option:</th>
<th>It is permissible to place the subdivisions side by side across a page if and only if all the subdivisions can be accommodated on one braille line. If all the subdivisions cannot be accommodated on one braille line, the (1-5; 3-5) format is used. This is an optional format style and applies only to subdivisions. (This restriction does not apply to spatial material, which will be studied later in this course.) [7.18.2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tabular Form:</td>
<td>When itemized material is arranged in tabular form so that items are numbered at the margin and subdivisions are aligned beneath lettered column headings, the material is transcribed in one of the following ways: [7.18.3]</td>
</tr>
<tr>
<td>Instructions Preceding Itemized Material (5-3):</td>
<td>When a group of numbered or lettered problems is preceded by instructions, the instructions begin in cell 5, with runovers in cell 3. One line is left blank above instructions unless the instructions follow a cell-5 or a cell-7 heading. Instructions may begin on line 1 of the braille page if no running head is in use. The related itemized material follows on the next line unless the material itself requires a blank line before it. At least one line of the instructions must be on the same braille page as the related problems which follow. [6.11]</td>
</tr>
</tbody>
</table>
OR

Exercise Set: Runover margins for itemized material are determined individually for each question. A problem with no subentries will be (1-3); the next problem may have subentries and so will be (1-5; 3-5), etc. [7.19]

Margins: Displayed Mathematical Material

Displayed Mathematical Expressions: When mathematical material is set apart from the body of the text in the print copy, it is referred to as a displayed expression. In braille, margins for displayed mathematical material depend upon the margins of the surrounding text. The first cell of the displayed material is indented two cells to the right of the runover cell of the preceding material. These margins apply regardless of the presence of runover material in the preceding paragraph. [8.25]

- In unitemized explanatory portions of the text, displayed mathematical material begins in cell 3. Runovers begin in cell 5. [Text (3-1); displayed material (3-5)]

- In itemized text without subdivisions, displayed mathematical material begins in cell 5. Runovers begin in cell 7. [Text (1-3); displayed material (5-7)]
• *In itemized text with subdivisions*, displayed mathematical material begins in cell 7. Runovers begin in cell 9. [Main division text (1-5); displayed material (7-9). Subdivision text (3-5); displayed material (7-9)]

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main item

\| cell 7
\| cell 9

subdivision

\| cell 7
\| cell 9
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• *Within or following instructions*, displayed mathematical material begins in cell 5. Runovers begin in cell 7. [Instructions (5-3); displayed material (5-7)] [8.25.3]

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instructions

\| cell 5
\| cell 7

itemized

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**Blank Lines with Displayed Material:** A line is not skipped above or below displayed mathematical material unless the preceding or following material requires a blank line. [8.25]

**Division of Mathematical Expressions Between Braille Lines**

When a mathematical expression is too long to fit on one braille line within the current margins the expression is divided between braille lines according to the rules of the Nemeth Code. A new line need not be forced if there is room on the line to begin the expression, provided the division is made in accordance with the principles defined below. Runovers conform to the margin requirements currently in effect – be it itemized, instructional, explanatory, labeled, subdivided, or displayed material.

**Long Numeral:** A long numeral is divided after a comma if a comma is present, and a hyphen is inserted. If the numeral does not contain a comma, the hyphen may be inserted after any digit. When a numeral is divided between braille lines, the numeric indicator is used before the first digit of the numeral on the next line. [2.7.1]

**Enclosed List:** If an enclosed list will not fit on a single braille line, use as much of the current line as possible and begin a runover line after a comma. [5.15.3.a]
Placement of Code Switch Indicators

About Code Switching: The base code used in a complete transcription is Unified English Braille ("UEB"). When mathematical content occurs anywhere in the transcription, the non-technical notation follows UEB rules while the technical notation follows the rules of the Nemeth Code. The reader will assume he is reading Unified English Braille unless signaled otherwise by the use of an opening code switch indicator. The material between the opening Nemeth Code indicator and the Nemeth Code terminator follows Nemeth Code rules. UEB symbols are not used within the Nemeth Code switch indicators. [2.1]

General Principle in Narrative Context: The opening Nemeth Code indicator is followed by a space. The Nemeth Code terminator is preceded by a space (unless it begins a new line). These spaces do not represent spaces in print. [2.1] Within a paragraph, the switch indicators should appear on the same line as the expression if the mathematical expression and the two indicators will fit on one braille line within the current margins. [2.5.1] A switch indicator should not stand alone on a line if there is room for it to fall on the line with the math expression to which it applies. [2.5.1.a]

If two or more math expressions are brailled between the same code switch indicators, the line may wrap at the space between the expressions even if the entire Nemeth Code portion could fit on one line. [2.5.1.a]

Punctuation that relates to the main text is generally placed outside of the switch indicators when the surrounding text is in UEB. There is no space between the terminator and the following punctuation. [2.4] When punctuation occurs within mathematical material, Nemeth Code punctuation is used. To avoid excessive code switching between mathematical items, Nemeth Code punctuation may be used for punctuation which belongs to the sentence structure [3.3]; embedded identifiers may be brailled in Nemeth Code. [3.18]

Switch Indicators May Stand Alone on a Line: If a math expression will fit on one line but there is not room for one or both of the switch indicators, one or both switch indicators may stand alone on a line. Keeping the mathematical expression intact on one line is the priority. [2.5.2]

Switch Indicators ...

... at Page Turns: Keep the opening switch indicator on the same braille page as the mathematical material to which it applies. Unless it is impossible to arrange, both the opening Nemeth Code indicator and the Nemeth Code terminator must appear on the same page as the expression to which they apply. The opening Nemeth Code indicator should not stand alone at the bottom of a braille page, nor should the Nemeth Code terminator stand alone at the top of a braille page. Part of the expression to which it applies should appear on the same braille page as the indicator. [2.5.3; 4.7; 4.8]

... with Instructions: If exercise directions ("instructions") end with an expression in Nemeth Code and the subsequent math problem starts with Nemeth Code, Nemeth Code may be left in effect between the end of the directions and the start of the problem. [6.11.1]

... with Itemized Material: Identifiers are transcribed according to the rules for the code in use at the time. All identifiers in a section do not need to be transcribed in the same code (code switching may be required within the itemized portion). [3.18] To ensure that all identifiers begin in the same cell, the opening Nemeth Code indicator is placed at the end of the line of text that precedes the itemized material, or on the next line in the appropriate runover cell. [3.17]

... with Displayed Mathematical Material: When displayed mathematical material is both preceded and followed by UEB text, the expression and the two switch indicators may be placed altogether on one line if they will fit within current margins. If more than one line is required for the expression, the opening
Nemeth Code indicator is placed at the end of the text line preceding the displayed material. The Nemeth Code terminator is placed at the completion of the displayed expression. In either case, if the indicator will not fit on the current line, it is placed on the following line in the runover position. [8.25.1]

For further code-switching guidelines and illustrative examples see the following BANA publication: “Guidance for Transcription Using the Nemeth Code within UEB Context.”