



MARYLAND COMMON CORE CURRICULUM FRAMEWORKS FOR BRAILLE

Braille, Formatting, and Tactile Graphics Checklists By Grade

Student Name: _____




Pre Kindergarten

Nemeth Braille Code

	Mathematical Sign	Nemeth Symbol	
Numeric indicator	N/A	⠠	
Read numbers 0-10	0 1 2 3 4 5 6 7 8 9 10	⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	
Punctuation indicator	1.	⠠⠠⠠⠠	
Transcriber's note symbols Opening Closing	N/A	⠠⠠ ⠠⠠	

Tactile Graphics

	Mathematical Sign	Braille	
Number line	↔	Tactile graphic	
Square	□	Tactile graphic	
Circle	○	Tactile graphic	
Triangle	△	Tactile graphic	
Rectangle	▭	N/A	
Objects	Example: picture of a car 	Tactile graphic Represented with simple, solid shapes (Example: rectangle)	

Kindergarten

Literary Braille Code

	Literary Sign	Braille Symbol	
Double dash	----	⠠⠠⠠⠠⠠⠠	
Ellipsis	...	⠠⠠⠠	
Letter sign	N/A	⠠	
Transcriber's note Opening Closing	N/A	⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠	
Alphabet words (BOP)	but can do every from go have just knowledge like more not people quite rather so that us very will it you as	⠠⠠ ⠠⠠	
Contractions (BOP)	and of for the with	⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠ ⠠⠠	

Formatting/Tactile Graphic

	Literary Sign	Braille	
Title page: illustrator	N/A	According to <i>Braille Formats</i> , the illustrator is omitted from the title page so the name may not always be present.	
Graphic organizers	N/A	See <i>Braille Formats</i>	
Maps	N/A	See Appendix C: Resources	

Grade 1

Literary Braille Code

	Literary Sign	Braille Symbol	
Hyphen	-	⠠⠤	
Comma	,	⠠⠨	
Quotation marks Opening Closing	" "	⠠⠨⠠⠨ ⠠⠨⠠⠨	
Colon	:	⠠⠠	
Apostrophe	'	⠠⠨⠠	
Accent sign	N/A	⠠⠨⠠	
Prefixes (CC)	com con dis	⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠	
Suffixes (CC)	ation ble ful ity less ment ness tion	⠠⠠⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠	
Common consonant digraphs (CC)	gh	⠠⠠⠠	
Common consonant digraphs (CC and BOP)	ch sh th wh	⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠ ⠠⠠⠠	
Prepositions (CC)	above below behind beneath beside between beyond	⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠	

Grade 1

	tomorrow	⠠⠏⠗⠊⠎⠗⠊⠑	
	tonight under	⠠⠏⠗⠊⠎⠊⠒⠗⠗⠗⠠⠥⠗⠑	
	upon was were	⠠⠥⠑⠒⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	
	where which	⠠⠠⠠⠠⠠⠠⠠⠠	
	whose word	⠠⠠⠠⠠⠠⠠⠠⠠	
	work world	⠠⠠⠠⠠⠠⠠⠠⠠	
	would young	⠠⠠⠠⠠⠠⠠⠠⠠	
	your yourself	⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	

Formatting/Tactile Graphics

	Literary Sign	Braille	
Headings	N/A	<i>See Braille Formats</i>	
Table of contents: guide dots	N/A	⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠⠠	
Boldface indicator Single Double	N/A	⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠	
Underline indicator Single Double	N/A	⠠⠠⠠⠠ ⠠⠠⠠⠠	
Boldface and italic indicator Single Double	N/A	⠠⠠⠠⠠⠠⠠ ⠠⠠⠠⠠⠠⠠⠠⠠	
Color indicator (follow with first letter of color)	N/A	⠠⠠	

Grade 1

Nemeth Braille Code

	Mathematical Sign	Braille	
Numbers 21-120	32 33 99 100		
Tally marks			
Shape indicator	N/A		
Horizontal equations with question mark or blank space for omission	$4 + ? = 7$ $4 + \quad = 7$		
Horizontal equations with blank line for omission	$4 + _ = 7$		
Horizontal equations with box/square for omission	$4 + \square = 7$		
Spatial arrangements of addition and subtraction Separation line extending one space on each side of arrangement	$\begin{array}{r} 40 \\ +23 \\ \hline 63 \end{array}$		
Carried number indicator	$\begin{array}{r} 1 \\ 47 \\ +23 \\ \hline 70 \end{array}$		
Less than	$2 < 4$		
Greater than	$5 > 1$		

Tactile Graphics

	Mathematical Sign	Braille	
Rectangular prisms, trapezoid, half-circle, quarter circle		Tactile graphics	

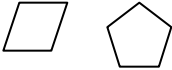
Grade 2

Computer braille code: website address/hyperlink	www.google.com		
Trademark	™		
Copyright	©		

Diacritical marks			
Stress Primary Secondary Tertiary	N/A		
Breve	ă		
Cedilla	ç		
Circumflex	â		
Crossbar or underbar	g l		
Ligatures, tied letters	s h		
Macron	ū		
Overdot	ř		
Tilde	~ ñ		
Umlaut, diaeresis	ä		
Acute accent	á		
Grave accent	à		
Schwa	ə		

Grade 2

Tactile Graphics

	Mathematical Sign	Nemeth Symbol	
Ruler (nearest inch, centimeter, foot, yard, meter)	N/A	Tactile graphics	
Clocks (nearest 5 minutes)	N/A	Tactile graphic	
Dot (Line) plot (read and create)	Number line with Xs plotted horizontally above numbers for data points	Number line is a tactile graphic with a full cell to represent each X for plotted points ⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	
Picture graph (read and create)	N/A	Lines created as a tactile graphic with Nemeth Braille Code labels. A full cell represents each picture ⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	
Bar graph (read and create)	N/A	Tactile graphic with Nemeth Braille Code labels	
Quadrilaterals, pentagons		Tactile graphic	

Grade 3

Literary Braille Code

	Literary Sign	Braille Symbol	
Brackets	[
Opening]		
Closing			

Formatting

	Literary Sign	Braille	
Nemeth Code Indicators	N/A		
Begin			
End			
Poetry Stanzas	N/A	See <i>Braille Formats</i>	
Numbered lines			
Formats (shape)			



Nemeth Braille Code

	Mathematical Sign	Nemeth Symbol	
Multiplication cross	x		
Multiplication dot	•		
Division	÷		
Division cage (spatial format)	$\begin{array}{r} 7 \\ 3 \overline{) 21} \end{array}$		
Division cage (linear format)	$3 \overline{) 21}$		
Multipurpose indicator	N/A		
Remainder	$\begin{array}{r} 7 \text{ R}1 \\ 3 \overline{) 22} \end{array}$		
Parentheses	(5, 10)		

Grade 3

English letter indicator	N/A	⠆	
Picture graph with 2:1 scale (read and create)	N/A	<p>Lines created as a tactile graphic with Nemeth Braille Code labels. A full cell represents each whole picture</p> <p style="text-align: center;">⠆</p> <p>Dots 4, 5, 6 represent each half picture</p> <p style="text-align: center;">⠆</p>	

Tactile Graphics

	Mathematical Sign	Nemeth Symbol	
Rhombus		Tactile graphic	
Right angle		N/A	
Area and perimeter	N/A	Tactile graphics	

Grade 4

Degree	5°		
Mixed numeral with diagonal fraction bar	$4 \frac{3}{4}$		
Circle			
Triangle			

Grade 5

Literary Braille Code

NONE

Formatting

NONE

Nemeth Braille Code

	Mathematical Sign	Nemeth symbol	
Set braces	{ }	⠠⠨⠠⠨	
Brackets	[]	⠠⠨⠠⠨	
Ordered pair	(<i>a</i> , <i>b</i>)	⠠⠨⠠⠨⠠⠨	
Exponent (superscript)	3^2	⠠⠨⠠⠨	
Baseline indicator	2^2+3^2	⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	

Tactile Graphics

	Mathematical Sign	Nemeth symbol	
Coordinate grid (axis, origin)	N/A	Tactile graphics	

Grade 6

Literary Braille Code

NONE


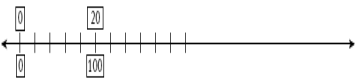

Formatting

NONE

Nemeth Braille Code

	Mathematical Sign	Nemeth symbol	
Not equal to	\neq	⠠⠨⠠⠨⠠⠨	
Ratio	$2 : 4$	⠠⠨⠠⠨⠠⠨⠠⠨	
Percent	$\%$	⠠⠨⠠⠨	
Absolute value of x	$ x $	⠠⠨⠠⠨⠠⠨	
Is less than or equal to	\leq	⠠⠨⠠⠨⠠⠨	
Is greater than or equal to	\geq	⠠⠨⠠⠨⠠⠨	
Negative number	$-(-3) = 3$	⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	
Use of variable in expressions	$A=6s^2$	⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨⠠⠨	

Tactile Graphics

	Mathematical Sign	Nemeth symbol	
Tape diagram		Tactile graphic	
Double number line diagrams		Nemeth Braille Code Number line	
Vertical number line	<p style="text-align: center;"><small>Figure 3 - Vertical Number Line</small></p> 	Nemeth Braille Code number line	

Algebra 1/Data Analysis

Nemeth Braille Code


	Mathematical Sign	Nemeth symbol	
Value of the function f at x	$f(x)$	$\dots \dots \dots$	
Exponent to the exponent	$\left(5^{\frac{1}{3}}\right)^3 = 5^{\left(\frac{1}{3}\right)(3)}$	$\dots \dots \dots$	
Residual (italicized e) = observed value (y) – predicted value (caret above y)	$e = y - \hat{y}$	$\dots \dots \dots$	
Sigma	$\Sigma = 0$	$\dots \dots \dots$	
Average rate of change	$\text{average rate of change} = \frac{\Delta y}{\Delta x} = \frac{f(x+h) - f(x)}{h}$	$\dots \dots \dots$	
Imaginary number	i	$\dots \dots$	
p implies q	$p \Rightarrow q$	$\dots \dots \dots$	
Proportional to	$x \propto y$	$\dots \dots \dots$	
Infinity	∞	$\dots \dots$	

Tactile Graphics

	Mathematical Sign	Nemeth symbol	
Segmented bar graph		Tactile graphic	

Algebra 2

Nemeth Braille Code

	Mathematical Sign	Nemeth symbol	
Arc with endpoints <i>A</i> and <i>B</i>		\widehat{AB}	
Sine of <i>A</i>	$\sin A$	$\sin A$	
Cosine <i>A</i>	$\cos A$	$\cos A$	
Tangent of <i>A</i>	$\tan A$	$\tan A$	
Logarithm	$(xy) = \log$	$\log xy$	
Directly under indicator	N/A	$\overline{}$	
Subscript	4^{th}	4^{th}	
The summation $a_1 + a_2 + \dots + a_n$.	$\sum_{k=1}^n a_k$	$\sum_{k=1}^n a_k$	
<i>n</i> factorial	$n!$	$n!$	
Theta	θ	θ	
Empirical rule: μ is the mean of the distribution (Greek letter lower case mu) σ is its standard deviation (Greek letter lower case sigma)	$\Pr(\mu - \sigma \leq x \leq \mu + \sigma) \approx 0.68$	$\Pr(\mu - \sigma \leq x \leq \mu + \sigma) \approx 0.68$	
Formula for density (Greek letter lower case rho)	$\rho = m/v$	$\rho = m/v$	

Tactile Graphics

	Mathematical Sign	Nemeth symbol	
NONE			

