

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

Lesson 5: Supporting the Student in Learning Nemeth Code and Math Concepts



University of South Carolina Upstate, Summer 2020

Lesson 5 Objectives

Participants will be able to:

1. Describe the importance of pre-teaching students Nemeth symbols and new formats
2. Locate and use resources for teaching math concepts to students in Grades 2-5
3. Identify and use hands-on materials and manipulatives to support student learning in Grades 2-5

Pre-Teach Nemeth Code Symbols and Formatting

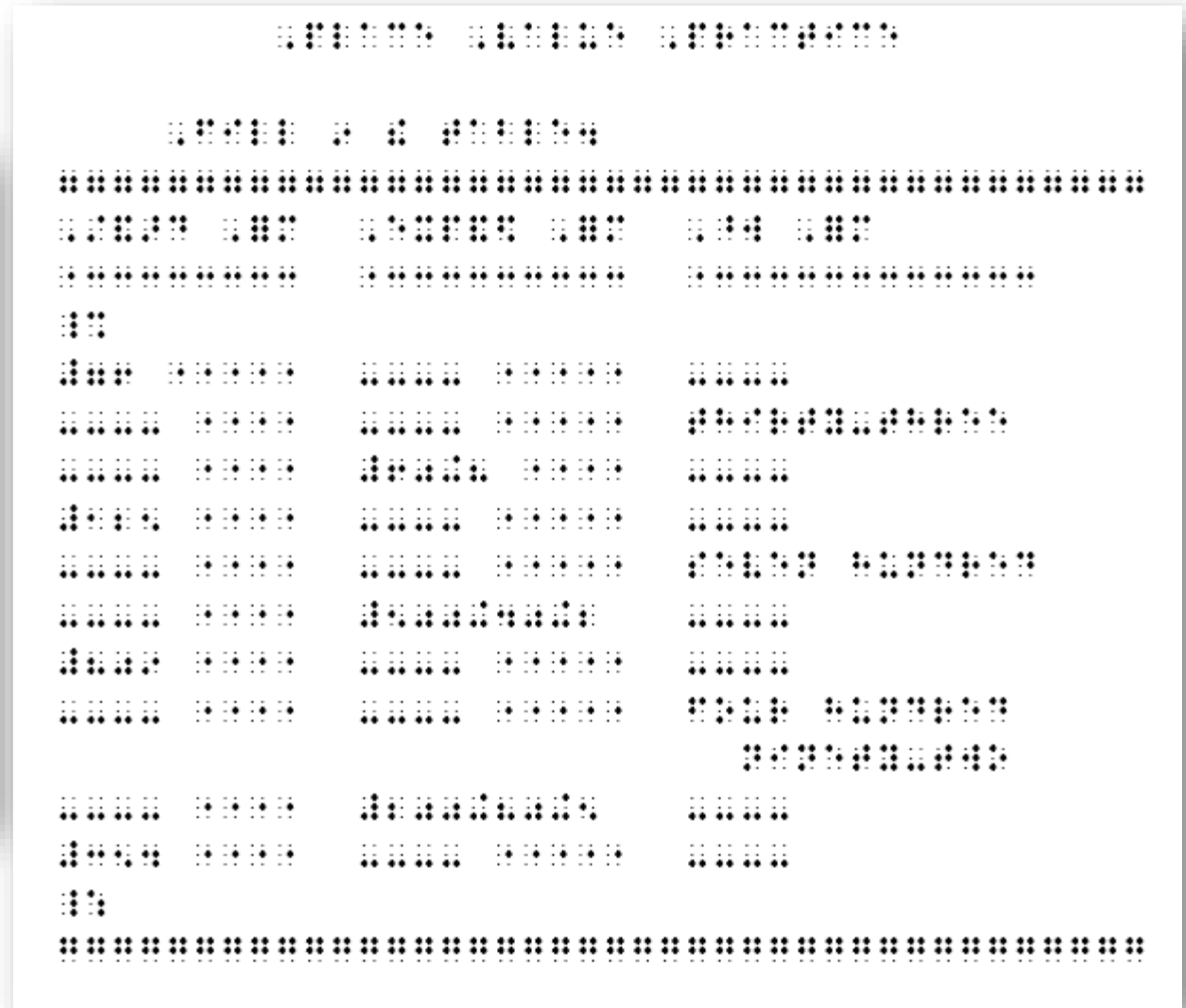
- New Nemeth symbols:
 - Multiplication cross
 - Multiplication dot
 - Divided by sign
 - Parenthesis, braces, and brackets
- New formats:
 - Headings
 - Format of multiple choice problems
- Tables
 - Column headings
 - Long dash
 - Guide dots
 - Top and bottom box lines
 - Placement of the Nemeth Code switch indicators

Teaching Table Reading Skills

Place Value Practice

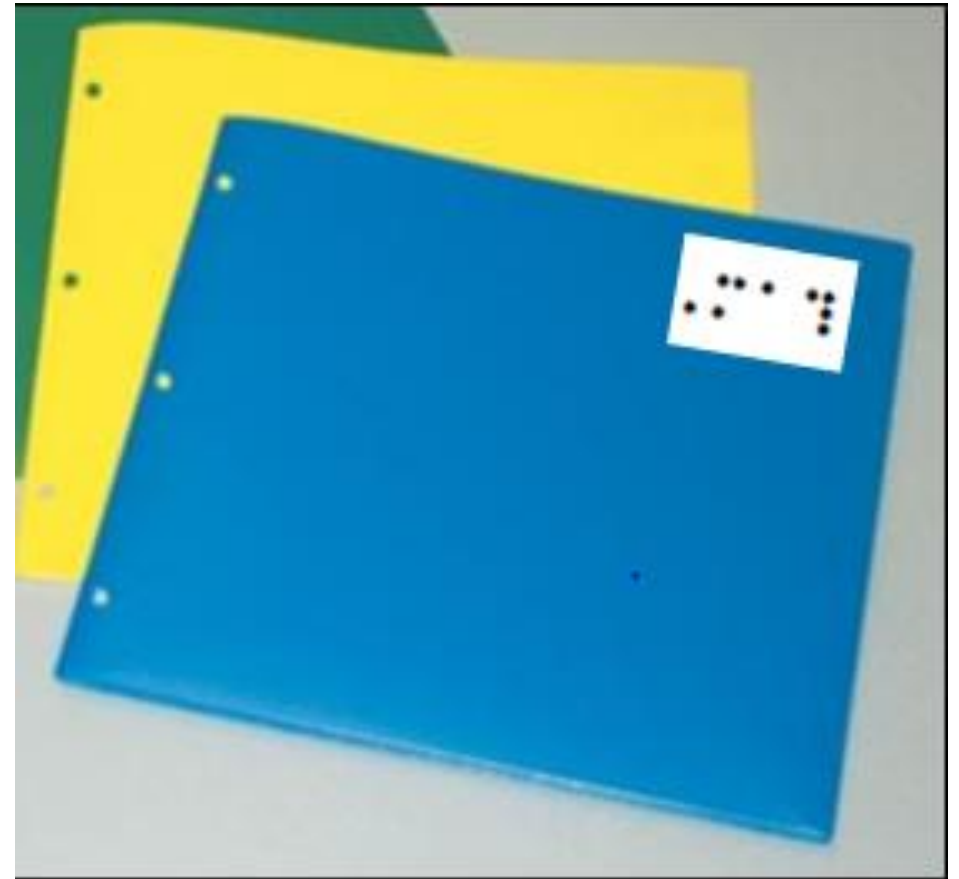
Fill in the table.

Standard Form	Expanded Form	Word Form
76		
		thirty-three
	60+8	
125		
		seven hundred
	500+40+2	
809		
		four hundred ninety-two
	200+80+5	
354		



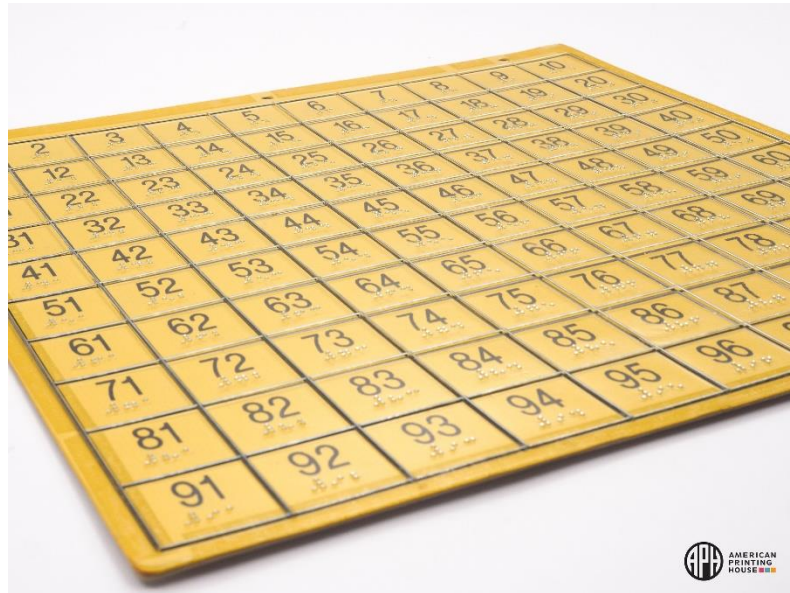
Teach Organization

- Sorting trays
- Storage boxes
- Baskets
- Labels
- Binders
- Folders
- Nonslip surface such as rubber shelf liner

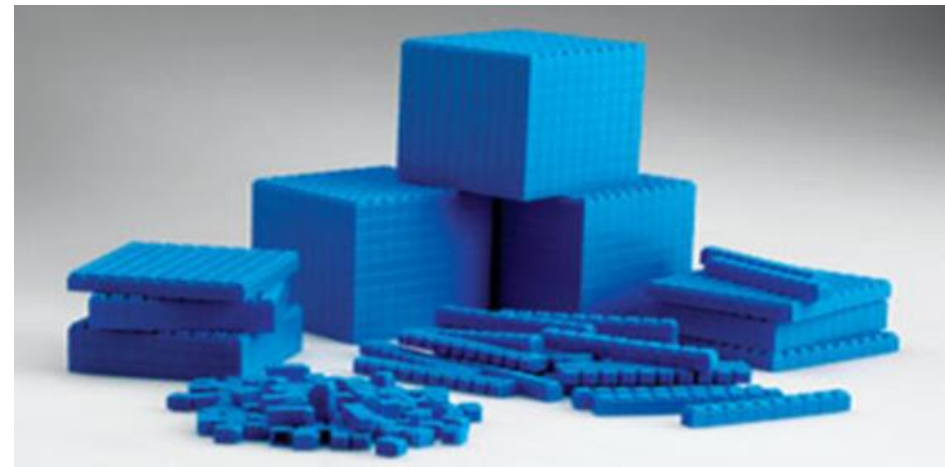


By 2nd grade the student needs to begin to take responsibility for developing a system that works for them.

Building Understanding of Number Relationships



APH Hundreds chart



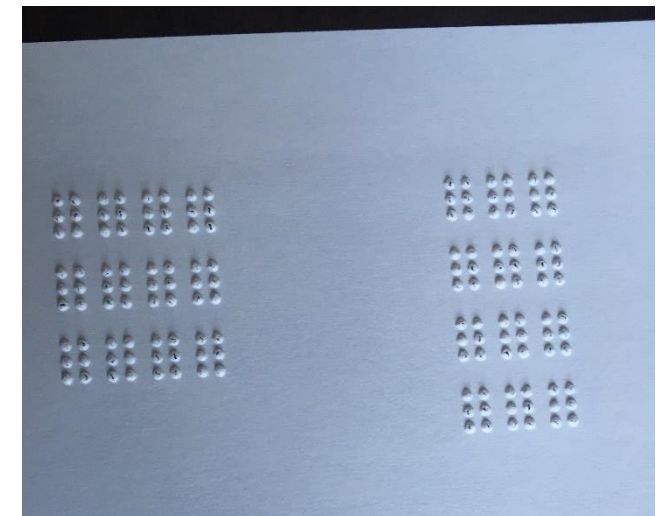
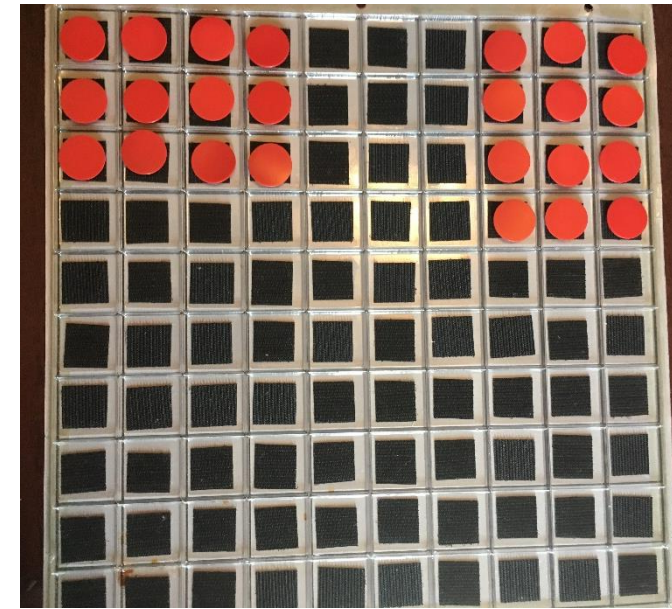
Base 10 blocks

Numbers and Algebraic Reasoning

- APH Feel 'n Peel Stickers: Nemeth Braille-Print Numbers 0-100
- APH Consumable Hundreds Chart
- APH Hundreds Boards and Manipulatives Kit
- Omnifix Cubes
 - Available from Didax
<https://www.didax.com/>

Hundreds Chart 5-82710-00

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



APH Products for Basic Operations

- Math Drill Cards in Braille and Large Print
 - Addition, Subtraction, Multiplication, & Division
- Quick Pick Math:
 - Addition, Subtraction, Multiplication, & Division
- Addition and Subtraction Table
- Multiplication and Division Table

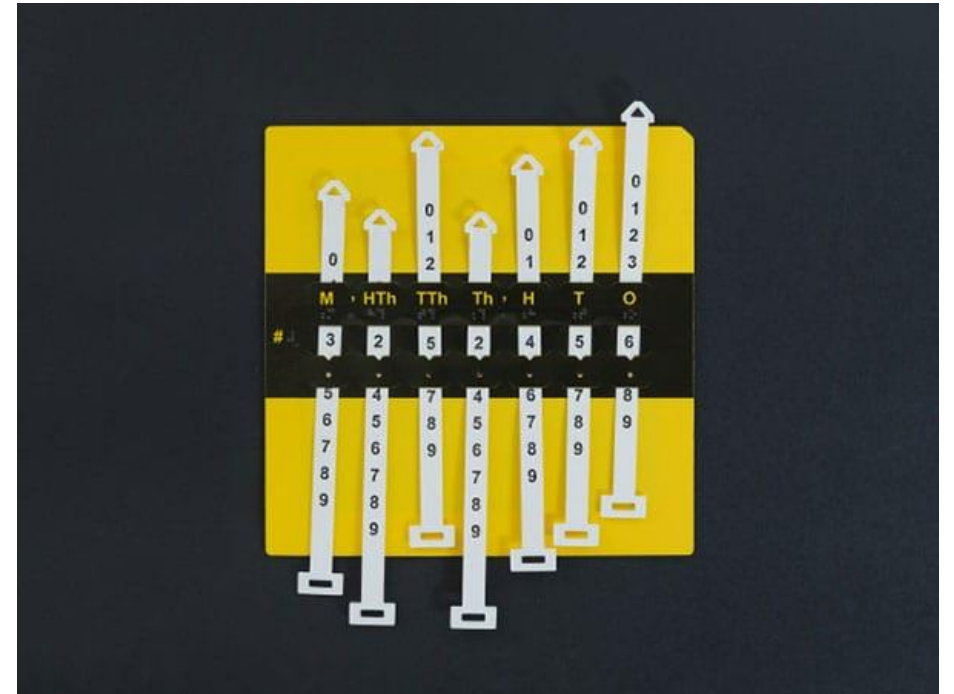


X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Multiplication / Division Table
Cat. No. 5-82700-01
APH

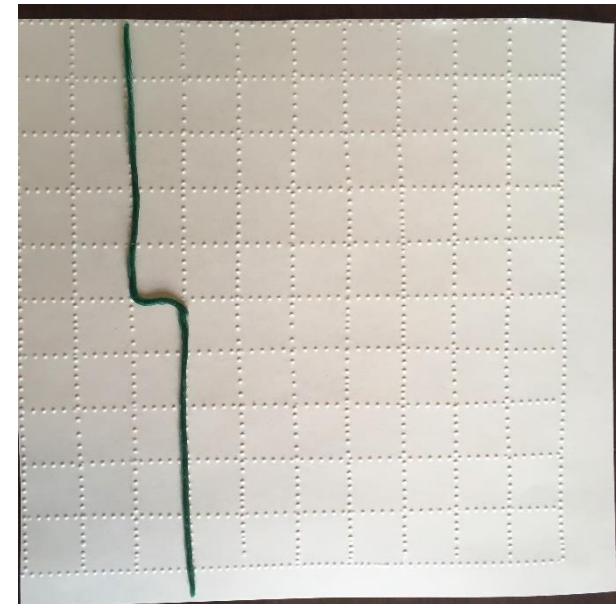
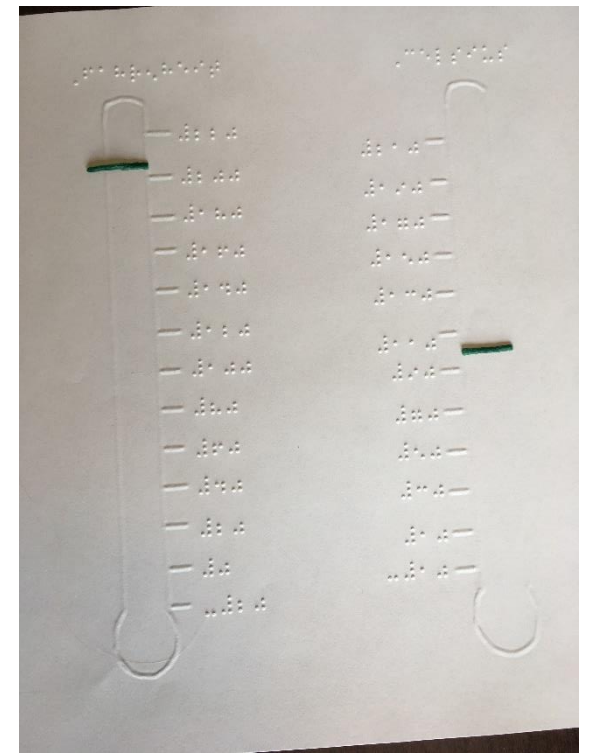
Place Value Setter from APH

- High contrast for those with low vision.
- Columns are labeled with place values (e.g., t = tens).
- Includes the numeric indicator.
- Ensure that you follow the classroom teacher's lead on how to write the number, left to right or right to left.



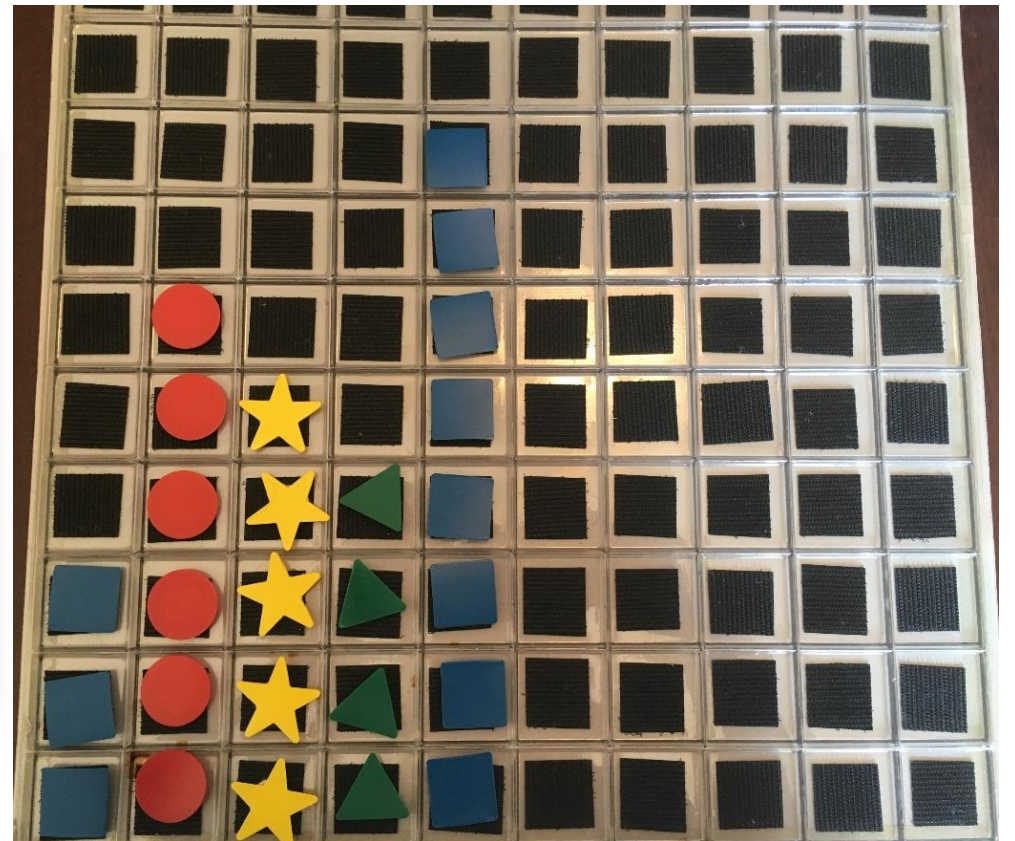
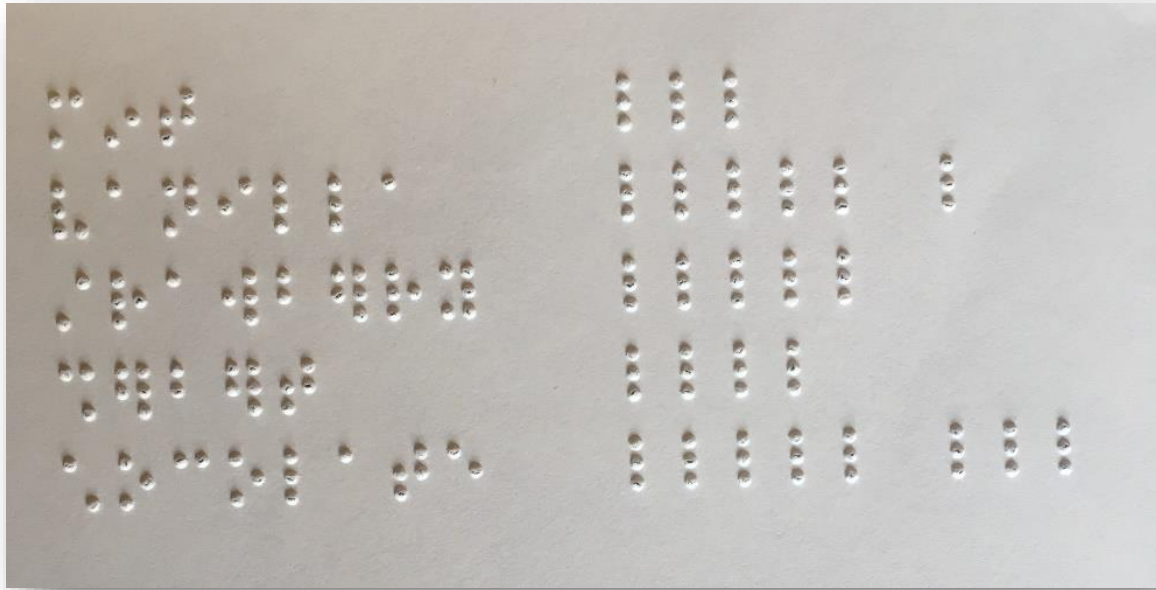
Wikki Stix[®]

- Available from:
<https://www.wikkistix.com/>
- Quick and easy
- Students can use them for marking items
- Can be bended as needed
- Removable

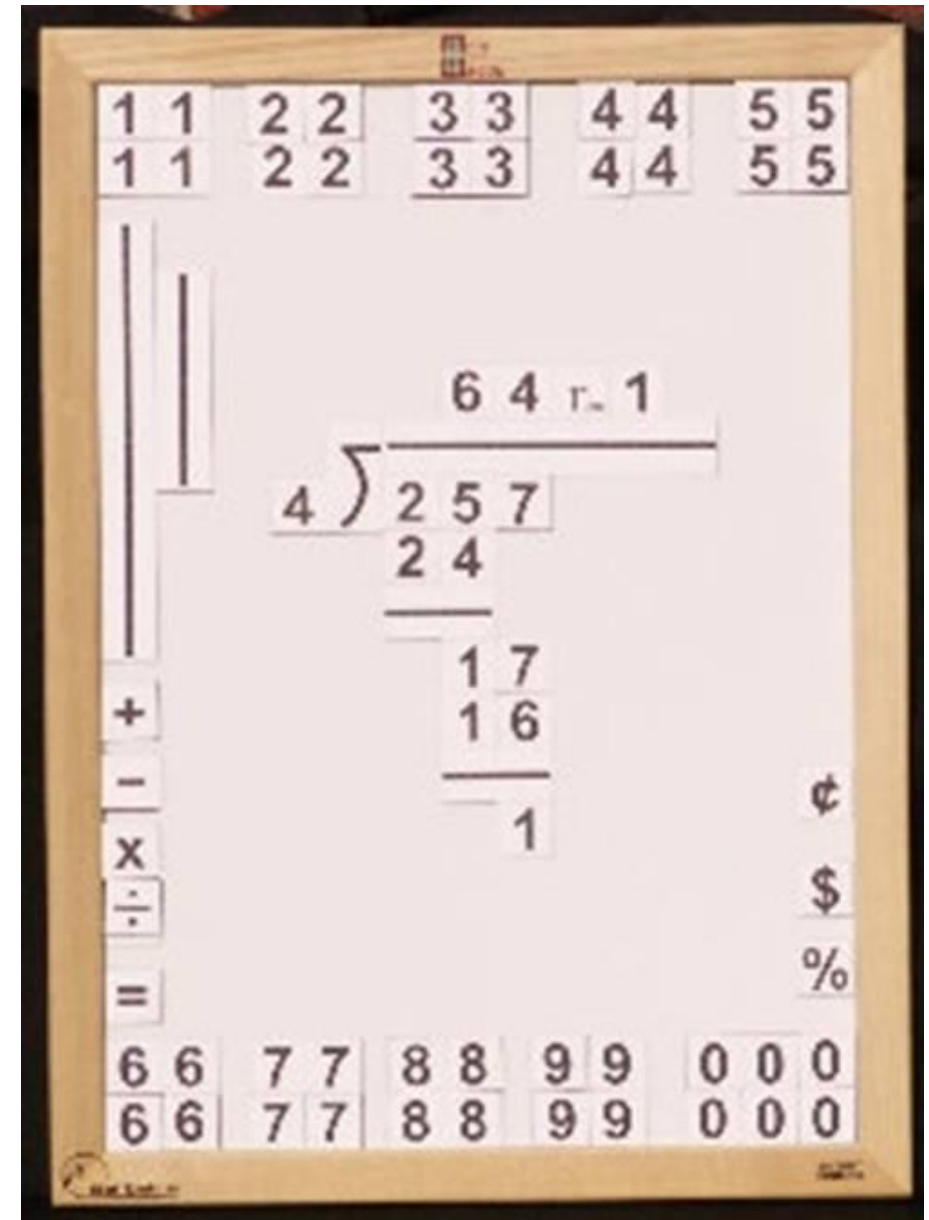


Graphing

- Students need to have opportunities to collect data and graph it.



- Available from <https://mathwindow.com/>
- Math Window Braille Basic Math Kit in Nemeth
- Kits available for algebra and geometry
- Students need to be organized in setting up their tiles.
- Ensure linear problems have a numeric indicator.



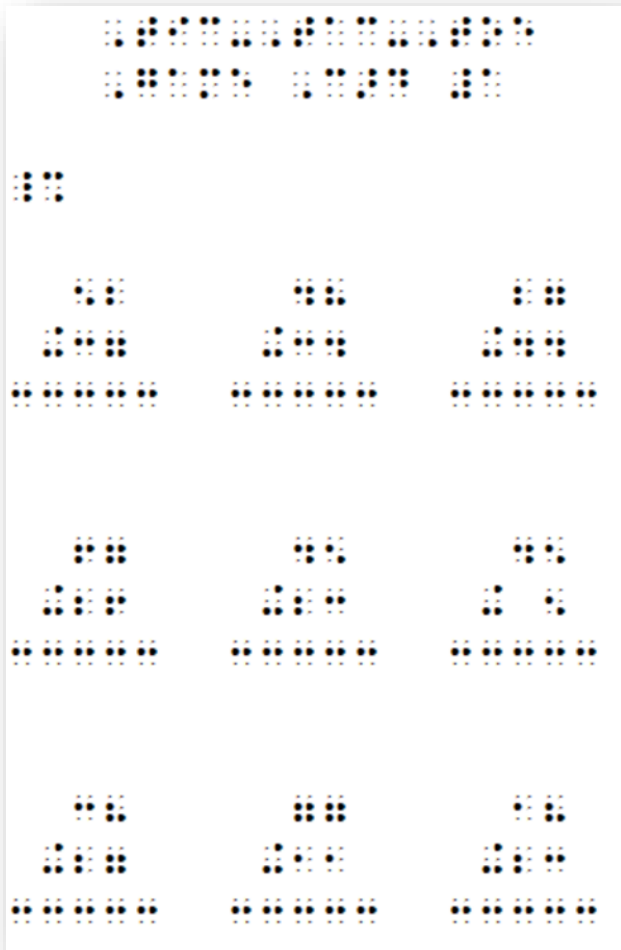
Pearson Nemeth Braille Code Curriculum

<http://accessibility.pearson.com/nemeth/>

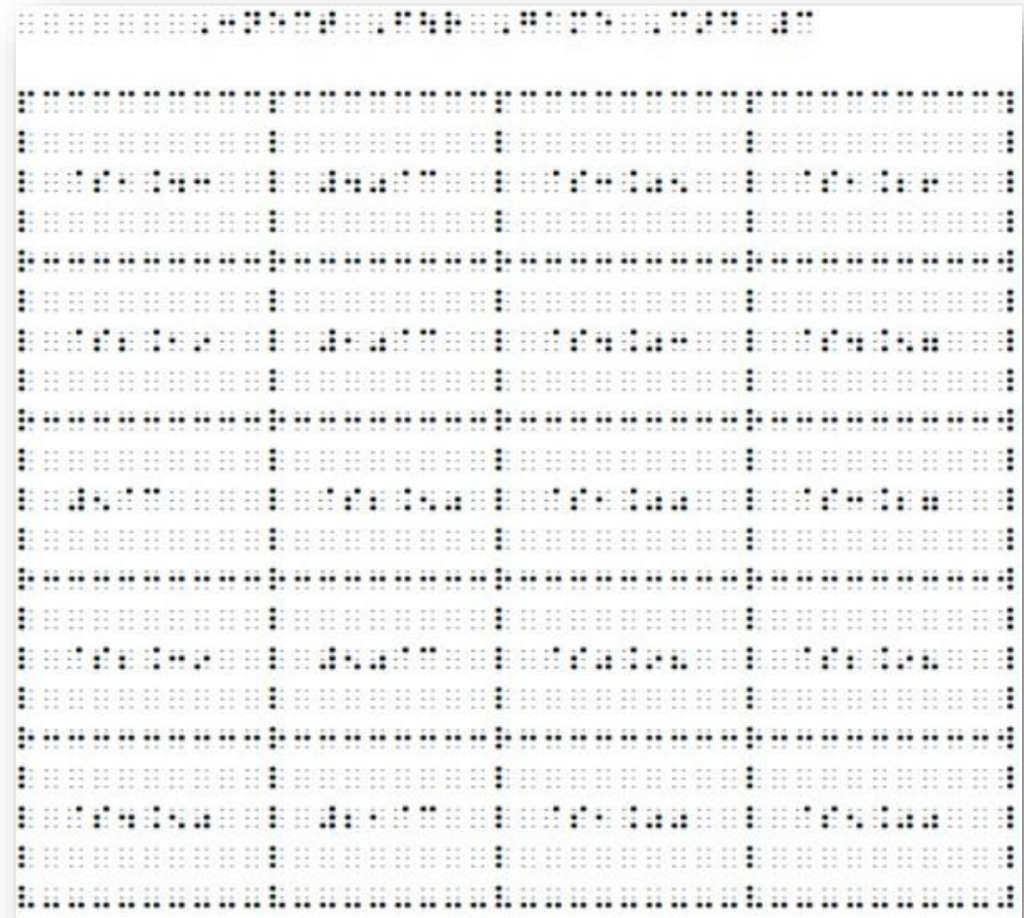
- Teaches students to read and write Nemeth Code within UEB Contexts
- Pre-K, kindergarten, first grade, and second grade materials
- Aligned with the Common Core State Standards (CCSS Initiative, 2010)
- Hands-on games and activities
- Includes teacher scripts, braille ready files for student worksheets, answer keys, data recording sheets, review activities, and assessments

Second Grade Games

Tic Tac Toe Game Card



Connect Four Game Card



Nemeth Braille Code Focused Lessons for Grades 3-8

Resources

Standards

Education

Accessibility Resources for
Assessment

Glossary

Nemeth Curriculum

Grades Pre-K - Second

Grades Three - Eight

Nemeth Symbol Library

Acknowledgements

About the Authors

Pearson Able

Welcome to the Nemeth Braille Focused Lessons!

Introduction

The Nemeth Braille Code Focused Lessons are designed to help students learn the Nemeth symbols primarily used in grades 3-8 and increase their knowledge and understanding of key mathematical concepts. Students of any age may enjoy and learn from the lessons, especially if they need a refresher or additional practice with Nemeth symbols.

The focused lessons were developed in response to feedback from dozens of students interested in learning new Nemeth symbols in a fun and supportive way. The user-friendly focused lessons include:

- How to read and write new symbols in Nemeth Code
- How to use these symbols for math concepts and applications like number lines and modified expressions
- Examples in braille
- Examples in print for parents and teachers
- Activities and games to reinforce the new symbols
- List of special symbols for reference
- Abbreviated lesson documents with only examples and problems for students who are transitioning to braille or new to the Nemeth Code

Use the following links to go to a description of each focused lesson and to download a zipped folder with the lesson.

Multiplication Focused Lesson

Multiplication is related to addition. For example, if you buy five ice cream cones for your friends and each cone has three scoops, how many scoops are there in all? You could determine the number of ice cream scoops by adding the same number, 3, five times.

$$3 + 3 + 3 + 3 + 3 = 15$$



However, there is another way to approach this problem. It could also be written as an equation using multiplication. Three times (multiplication cross) five equals fifteen.

$$3 \times 5 = 15$$



Division Focused Lesson

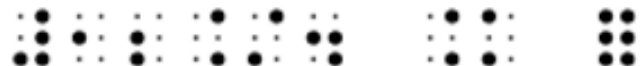
Division is related to multiplication. For example, if your aunt buys a dozen chocolate chip cookies for her family of four, how many cookies can each person have? You could determine the number of cookies by figuring out what number multiplied by four equals twelve.

$$? \times 4 = 12$$

A Braille representation of the equation $? \times 4 = 12$. The question mark is represented by a 2x2 grid of dots. The multiplication sign is a 2x2 grid of dots with a vertical line to its right. The number 4 is a 2x2 grid of dots. The equals sign is a 2x2 grid of dots. The number 12 is represented by a 2x2 grid of dots.

However, there is another way to approach this problem. It could also be written as an equation with a divided by sign. Twelve divided by four equals what number.

$$12 \div 4 = ?$$

A Braille representation of the equation $12 \div 4 = ?$. The number 12 is represented by a 2x2 grid of dots. The division sign is a 2x2 grid of dots with a vertical line to its right. The number 4 is a 2x2 grid of dots. The equals sign is a 2x2 grid of dots. The question mark is a 2x2 grid of dots.

Nemeth Symbol Library

<http://accessibility.pearson.com/nemethdatabase/>

- Initially the library started with higher grade levels and now includes all grade levels.
- 240 terms are words represented with a symbol in math (times, multiplied by).
- 136 definitions which is the explanation of how to write the symbol in Nemeth Code.
- More than 600 examples illustrating how to use the symbol in context.
- Course resource has a detailed video.