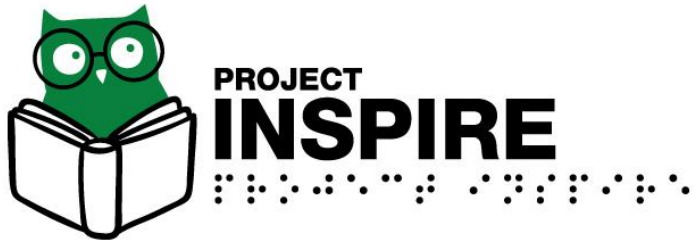
# An Introduction to Nemeth Code Symbols Used in Grades 2 to 5 and Strategies for Supporting Elementary Students in Building Math Skills

## 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

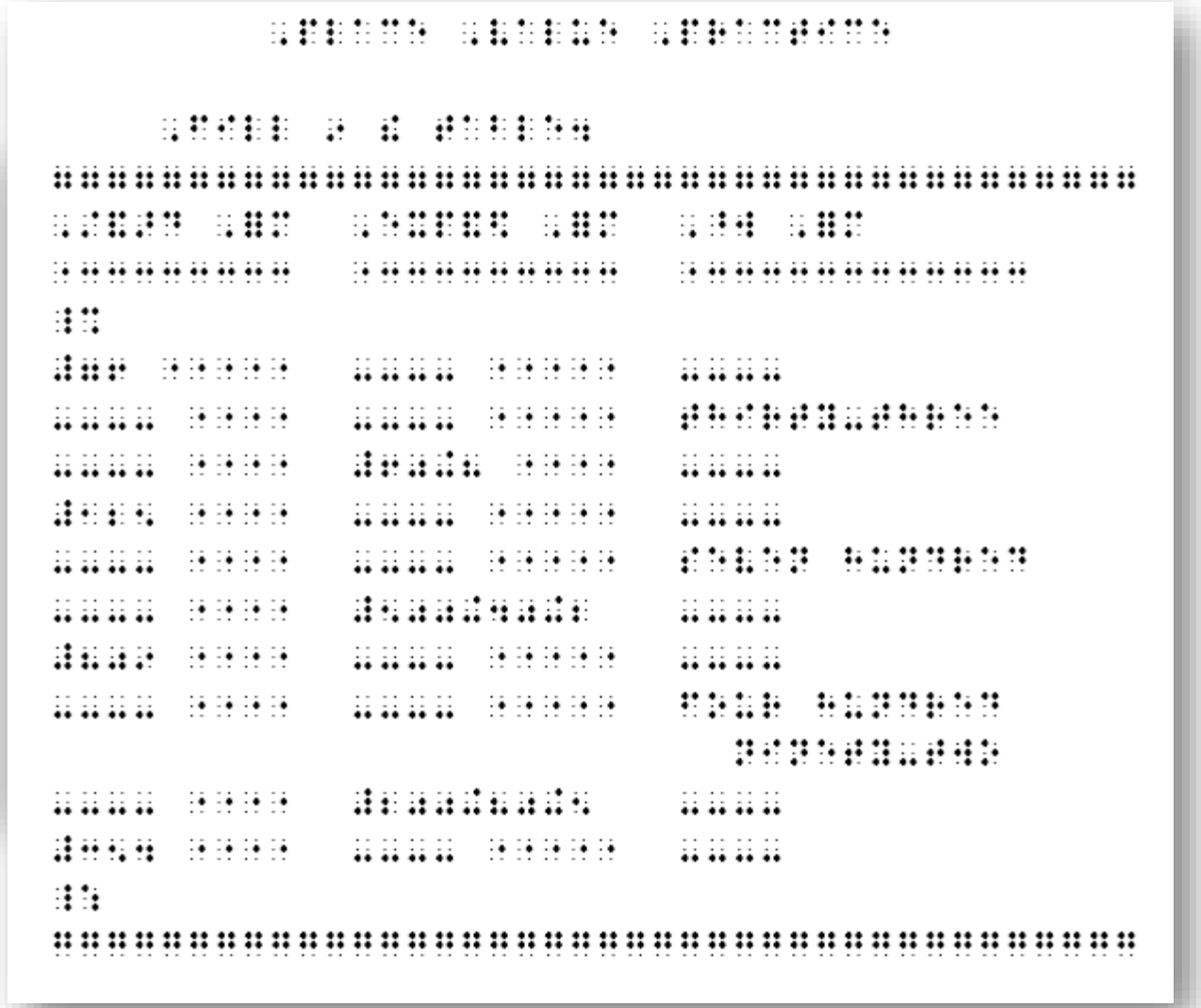
- New Nemeth symbols:
  - Multiplication cross
  - Multiplication dot
  - Divided by sign
  - Parenthesis, braces, and brackets
- New formats:
  - Headings
  - Format of multiple choice problems
- Tables
  - Column headings
  - Long dash
  - Guide dots
  - Top and bottom box lines
  - Placement of the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

# Teaching Table Reading Skills

Place Value Practice

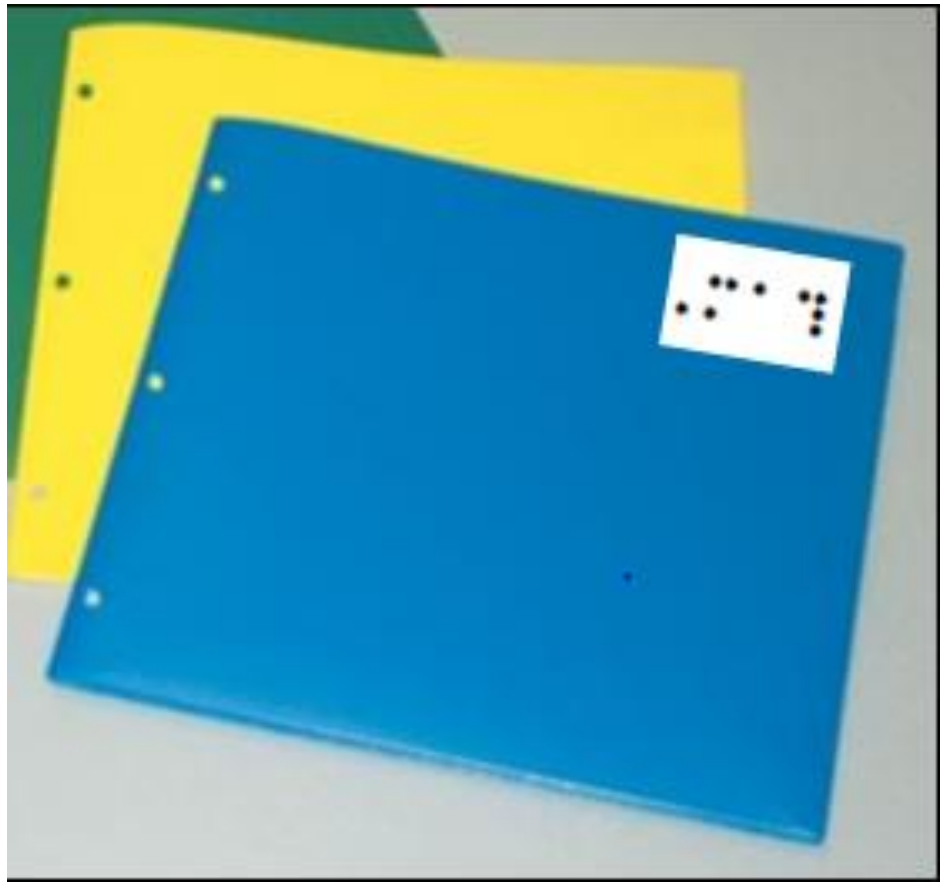
Fill in the table.

| 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 | | |



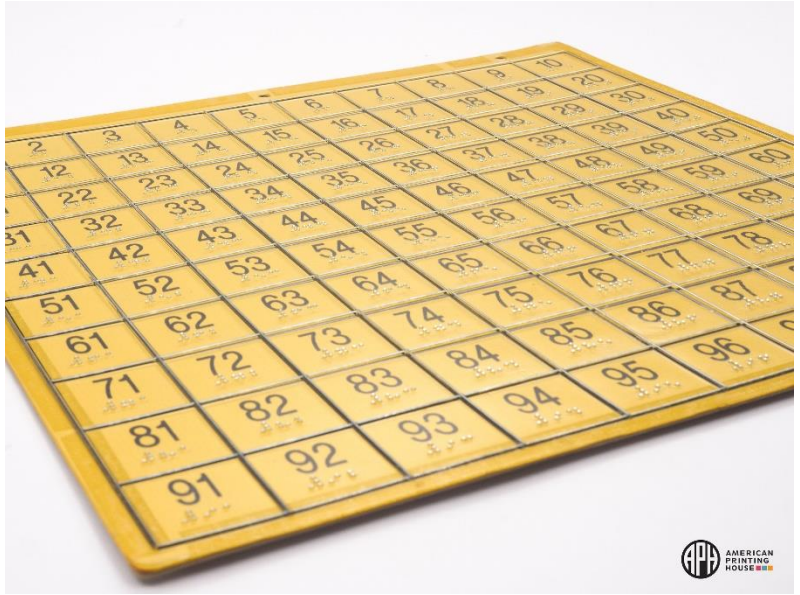
# Teach Organization

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

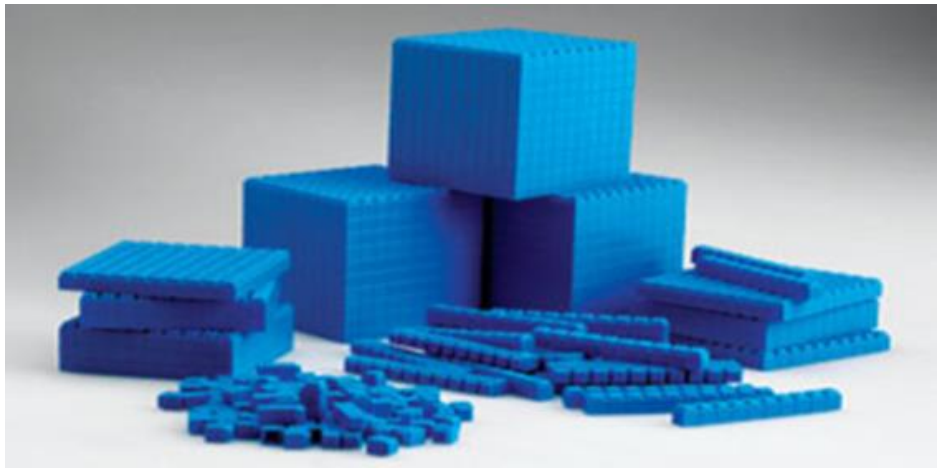


By 2nd grade the student needs to begin to take responsibility for developing a system that works for them.

# Building Understanding of Number Relationships



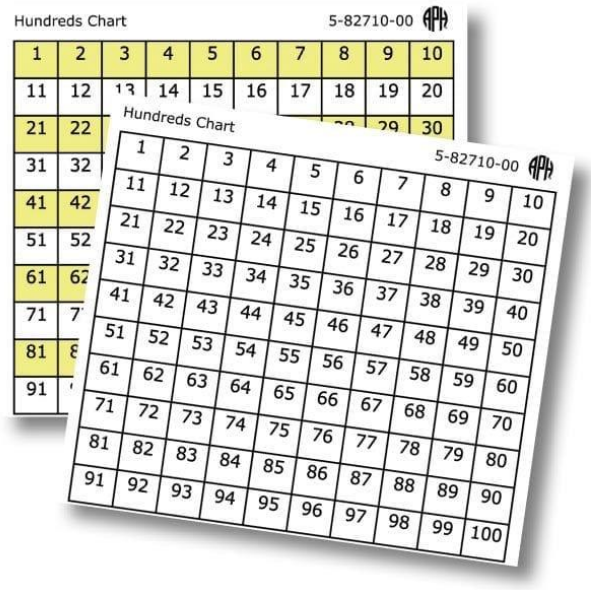

APH Hundreds chart

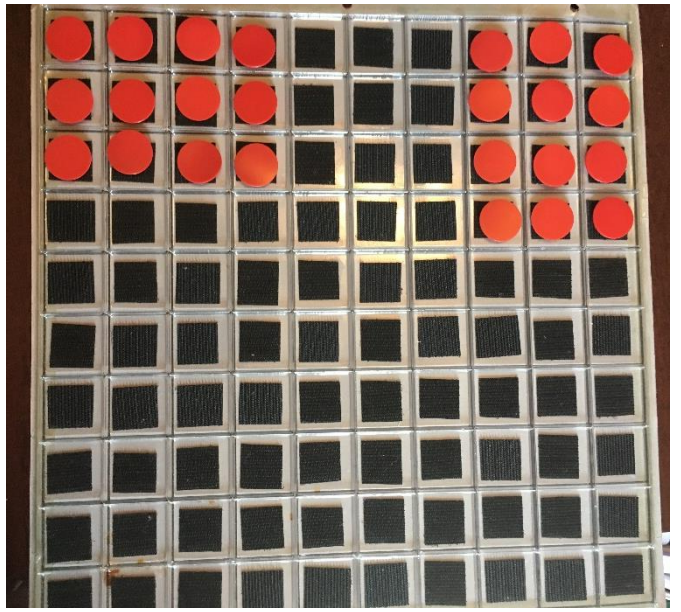


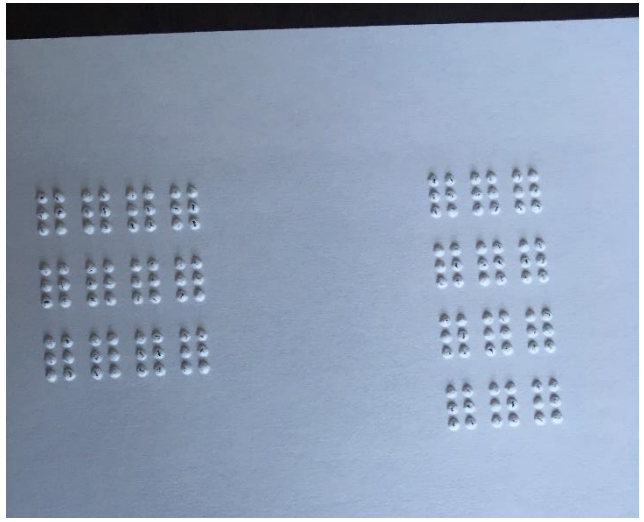
Base 10 blocks

# 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/

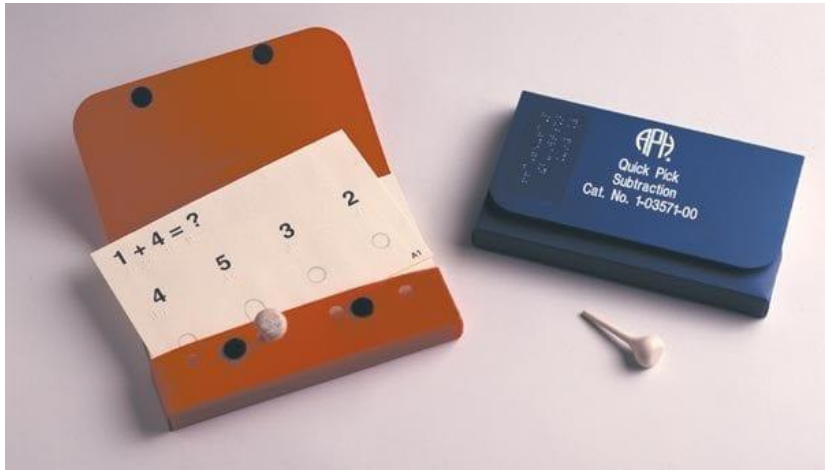


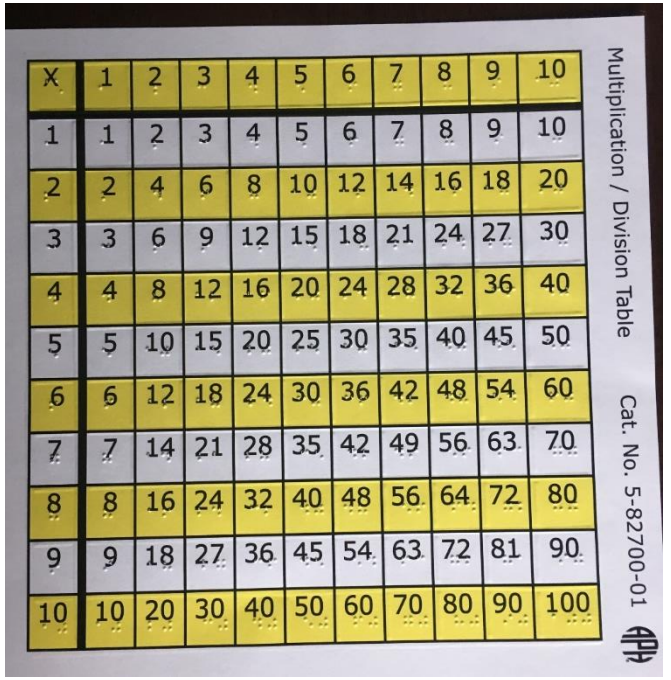





# APH Products for Basic Operations

- 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

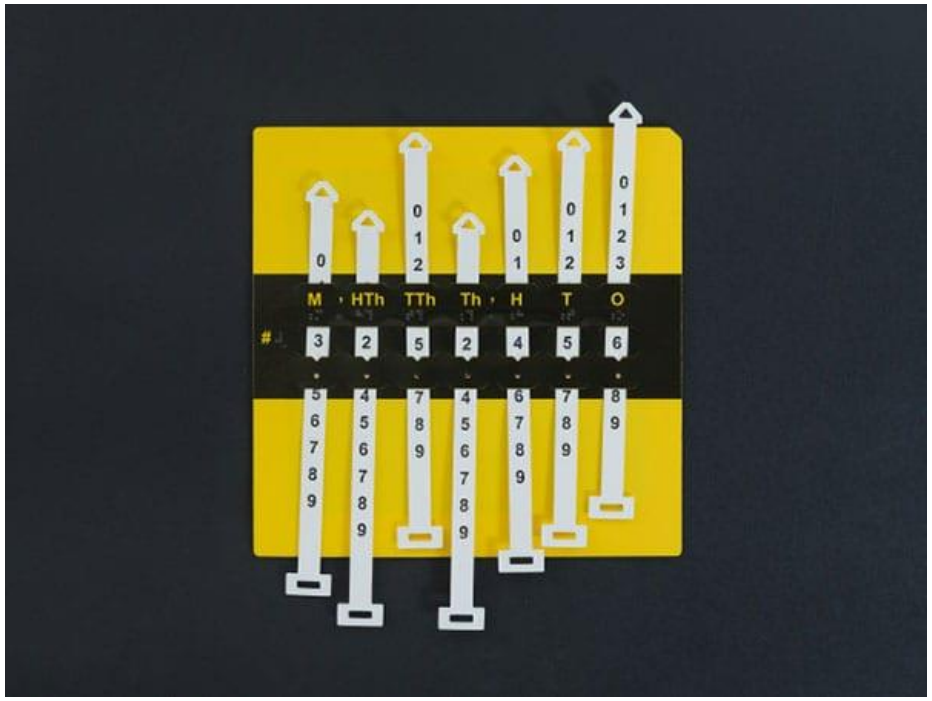



| X | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 3 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 |
| 4 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 |
| 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 |

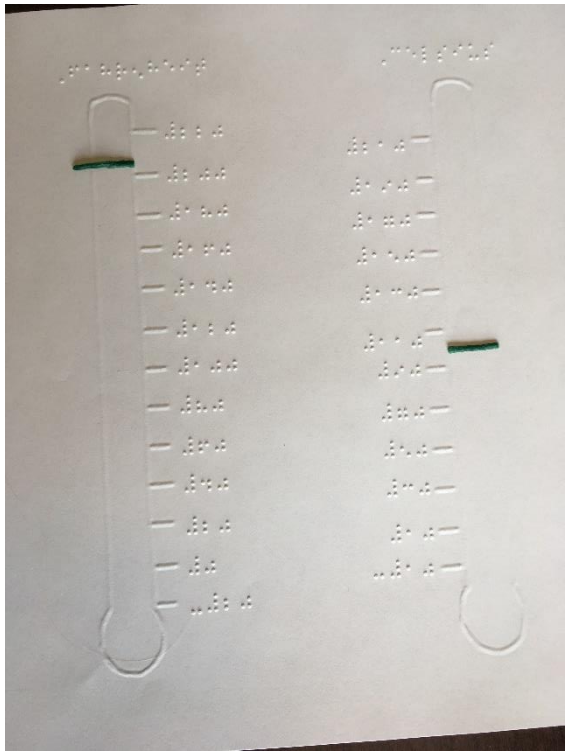
# Place Value Setter from APH

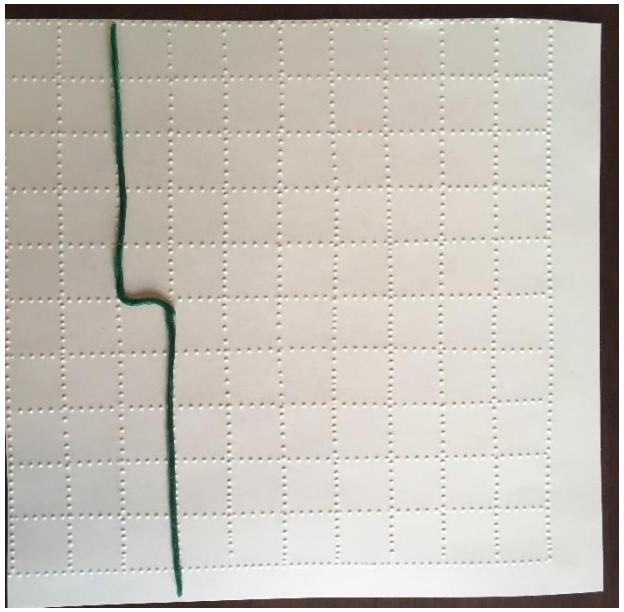
- High contrast for those with low vision.
- Columns are labeled with place values (e.g., t = tens).
- Includes the numeric indicator.
- Ensure that you follow the classroom teacher’s lead on how to write the number, left to right or right to left.



# Wikki Stix®

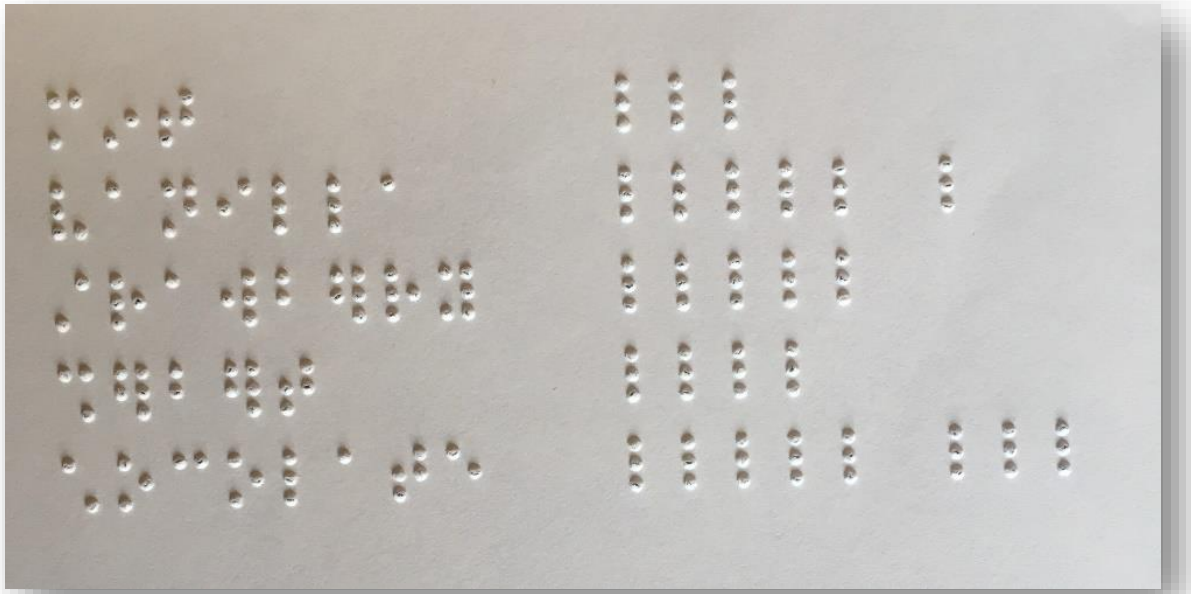
- Available from: https://www.wikkistix.com/
- Quick and easy
- Students can use them for marking items
- Can be bended as needed
- Removable

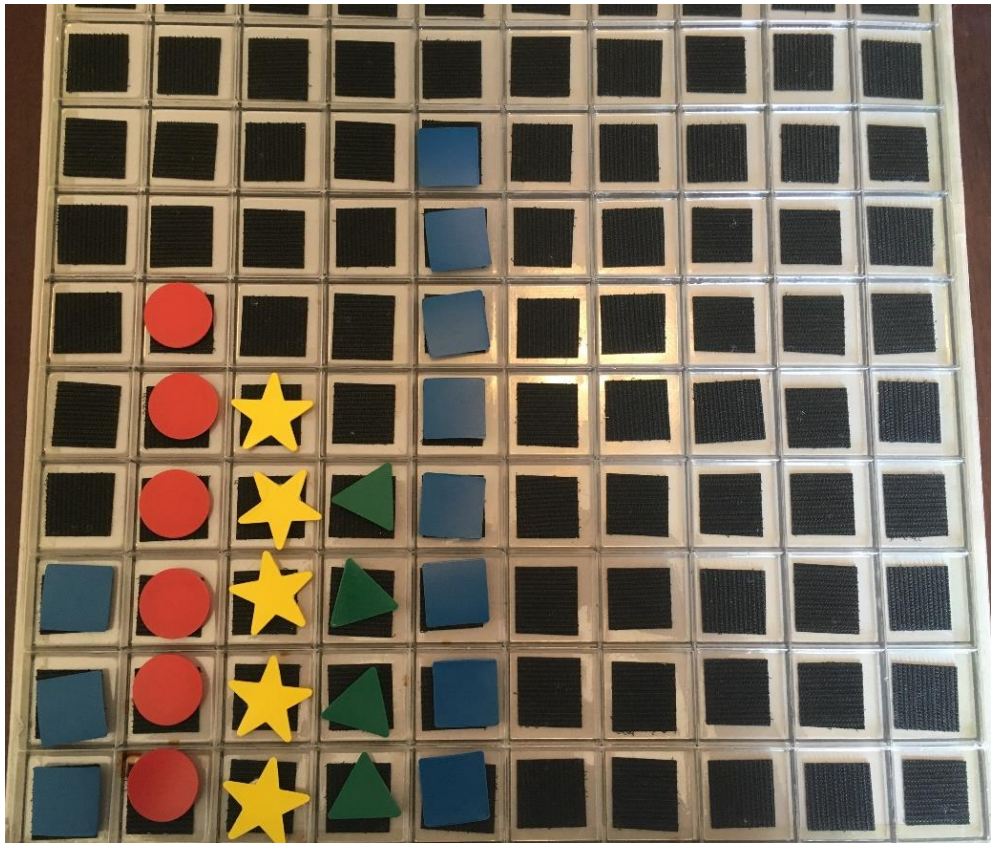




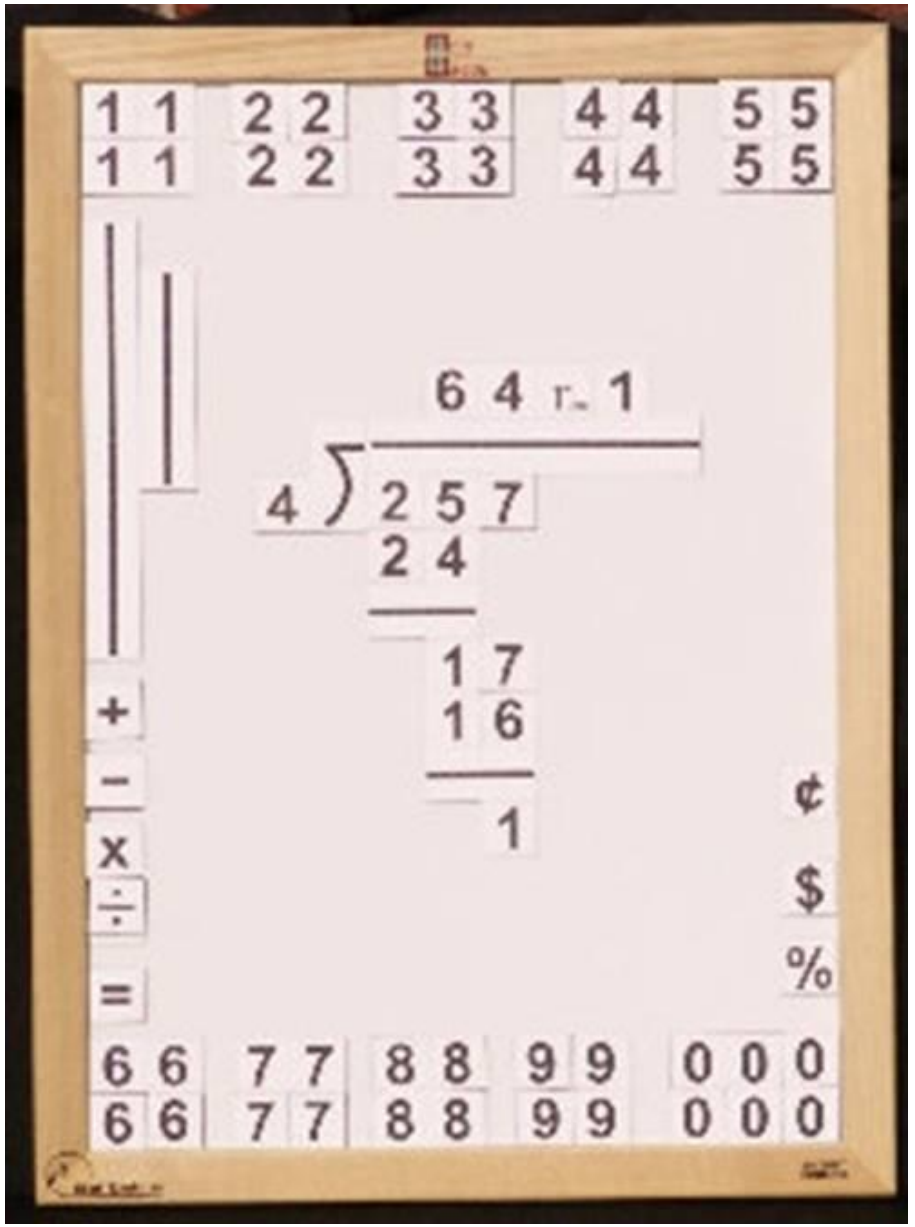
# Graphing

- 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.

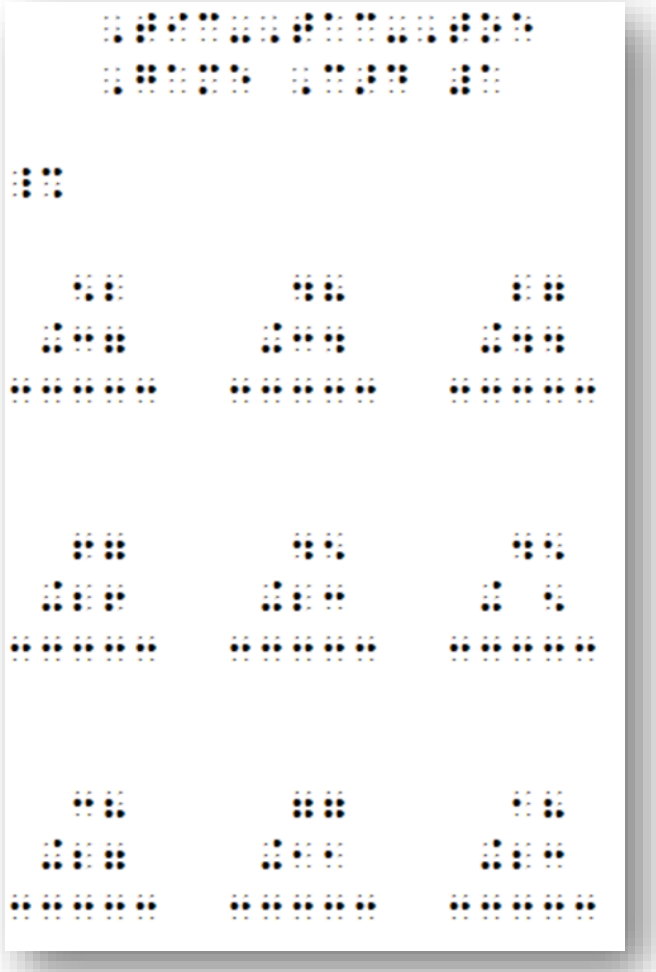


# Pearson Nemeth Braille Code Curriculum http://accessibility.pearson.com/nemeth/

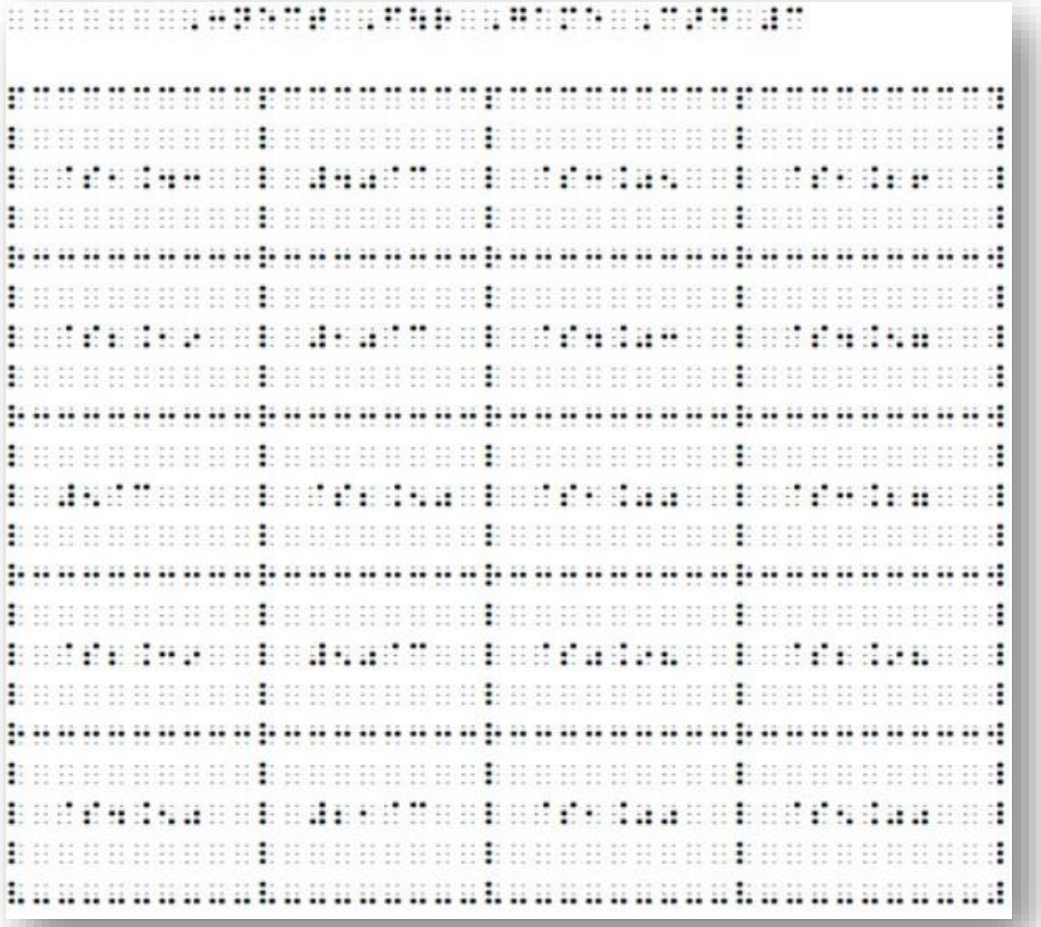
- Teaches students to read and write Nemeth Code within UEB Contexts
- Pre-K, kindergarten, first grade, and second grade materials
- Aligned with the Common Core State Standards (CCSS Initiative, 2010)
- Hands-on games and activities
- Includes teacher scripts, braille ready files for student worksheets,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

# Second Grade Games

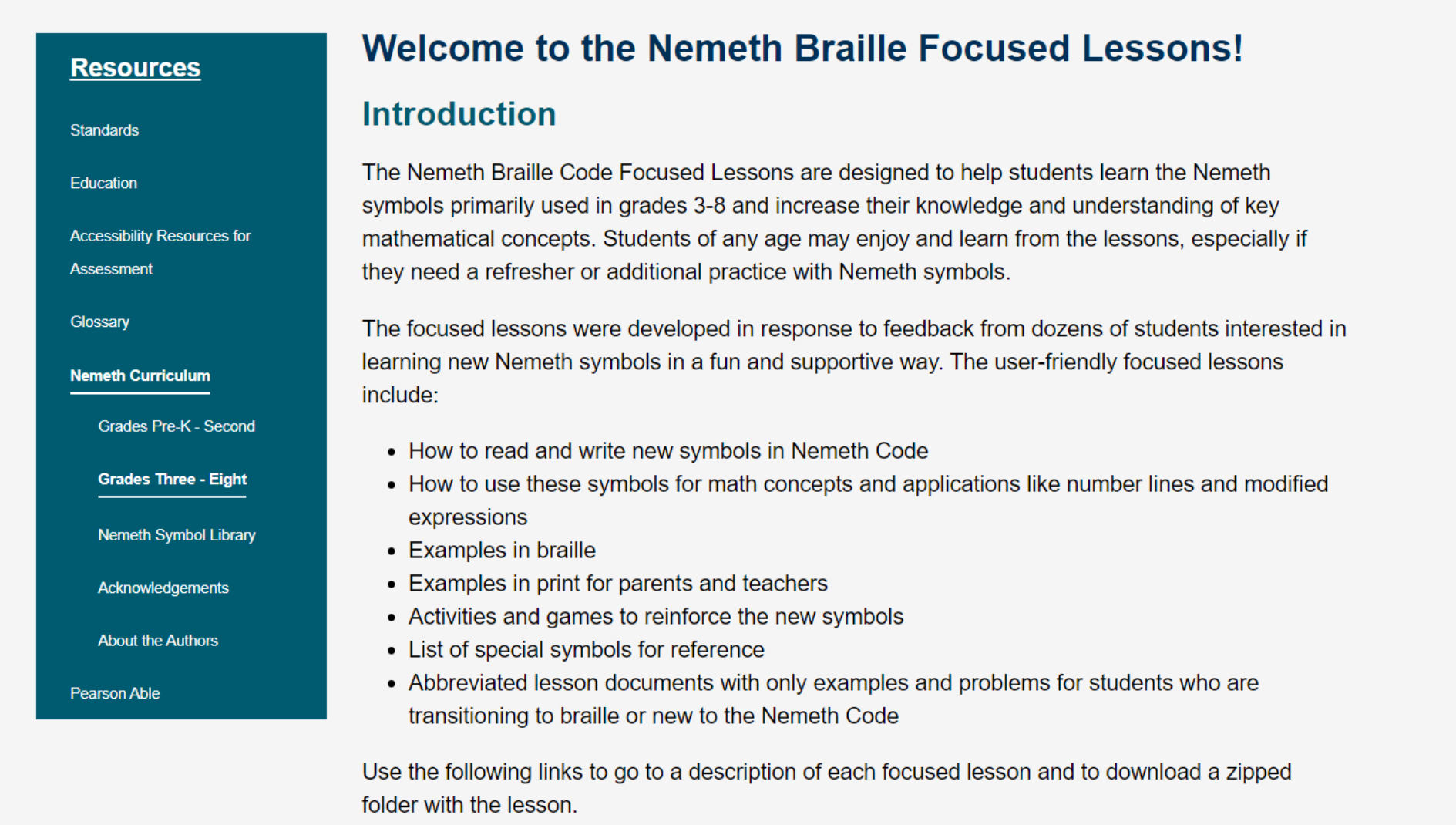
## Tic Tac Toe Game Card



## Connect Four Game Card



# Nemeth Braille Code Focused Lessons for Grades 3-8



# 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.

$?\times 4 = 12$

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.

$12 \div 4 = ?$

# 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.