

# **Teaching Students the Nemeth Braille Code: Strategies and Resources POSB Math & Science Institute 2019**

Sara Larkin (Iowa Educational Services for the Blind and Visually Impaired)

Susan Osterhaus (Texas School for the Blind and Visually Impaired)

Tina Herzberg (University of South Carolina Upstate)

# Learning Objectives

The participants will be able to:

- Identify three strategies that can be used to teach Nemeth code to students who read braille.
- Make connections between learning the Nemeth code and learning math.
- Identify three resources for locating symbols and examples for a particular part of the Nemeth code.

# Background

- Needed a comprehensive Nemeth curriculum for students
- Wanted to make it fun for students, parents, and teachers
- Wanted it to be easy to use and accessible for all, regardless of background and previous experience with Nemeth code
- Wanted to introduce math concepts that go along with the Nemeth symbols being taught
- Sought input from students, teachers, and parents and continue to do so

# Overview

- Aligned with the Common Core State Standards
- Early grade levels follow a scripted curriculum
  - Pre-Kindergarten, Kindergarten, and 1<sup>st</sup> Grade complete and ready to download at no cost
  - Incorporates fun facts about transportation
  - Other ECC skills addressed

# Overview (continued)

- Middle grade levels use multiple approaches
  - Searchable database with tutorial and grade level examples
  - Mini lessons with accompanying games and activities
    - **Five-Step Rule complete and ready to download**
- Higher grade levels use a searchable database
  - Available online to the public at no cost
  - Numerous examples

# What's Coming!!

- 2<sup>nd</sup> - 5<sup>th</sup> grade curriculum
- Additional middle grade level mini lessons
  - Number lines (spring 2019)
  - Mixed numbers & fractions
  - Selected symbols in middle school (e.g. factorial, radical)
- Tying mini lessons to the database

# More of What's Coming!!!

- Additional Nemeth and math terms in the searchable database
  - Selected elementary symbols
  - Middle school symbols
  - Geometry
  - Statistics
  - Calculus
  - Formulas

# Early Grade Level Organization

- Introduction
- Six Modules
- Cumulative Review and Posttest



# Module Contents

- Teacher/Parent Reference Materials
- Teacher/Parent Script and Teaching Notes
- Teacher/Parent Script and Teaching Notes with Answer Key in SimBraille
- Answer Key in Braille for the Writing Activities
- Student Braille Materials

# Module Contents (continued)

- Recording Sheet
- Teacher/Parent Script for Check-Up
- Answer Key in SimBraille for Check-Up
- Answer Key in Braille for Check-Up
- Student Braille Materials for Check-Up

# Cumulative Review and Posttest

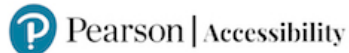
- Review Activities and Games
- Script and Accompanying Student Braille Materials
- Cumulative Recording Sheet
- Cumulative Posttest Script, Answer Key, and Student Materials

# Where Do We Find All of This?

- Visit the webpage [Pearson Accessibility webpage](#)
- Click on Nemeth Braille Curriculum
- Click on the grade level you would like to download

# Nemeth Curriculum Webpage

← → ↻ accessibility.pearson.com/nemeth/



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## Welcome to the Nemeth Braille Code Curriculum!

### Introduction

The Nemeth Braille Code Curriculum is designed to teach students who are visually impaired how to read and write the Nemeth code. It is aligned with the Common Core State Standards (CCSS Initiative, 2010) and includes hands-on activities and games that reinforce grade-level math concepts and make learning the Nemeth Code fun and meaningful for children of all ages. The curriculum also includes teacher scripts, braille ready files for student worksheets, answer keys, data recording sheets, review activities, and assessments.

Use the following links to download a zipped folder with the curriculum for the grade level(s) you need.

- [Nemeth Braille Code Curriculum Pre-Kindergarten](#)
- [Nemeth Braille Code Curriculum Kindergarten](#)

# Samples

# Let's Look at Parts of a Module

# Intentional Underlying Strategies

- Progression of skills without making assumptions
- Reading and writing within mathematical content
- Integration of earlier content in later content so there is built in review
- Building tactile skills along the way
- Inclusion of lots of activities and games to make learning Nemeth code fun and engaging
- Opportunities to generalize skills

# Examples of Making Connections to Math Concepts

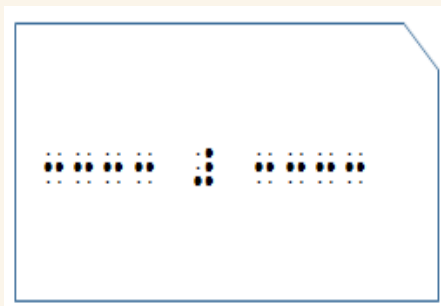
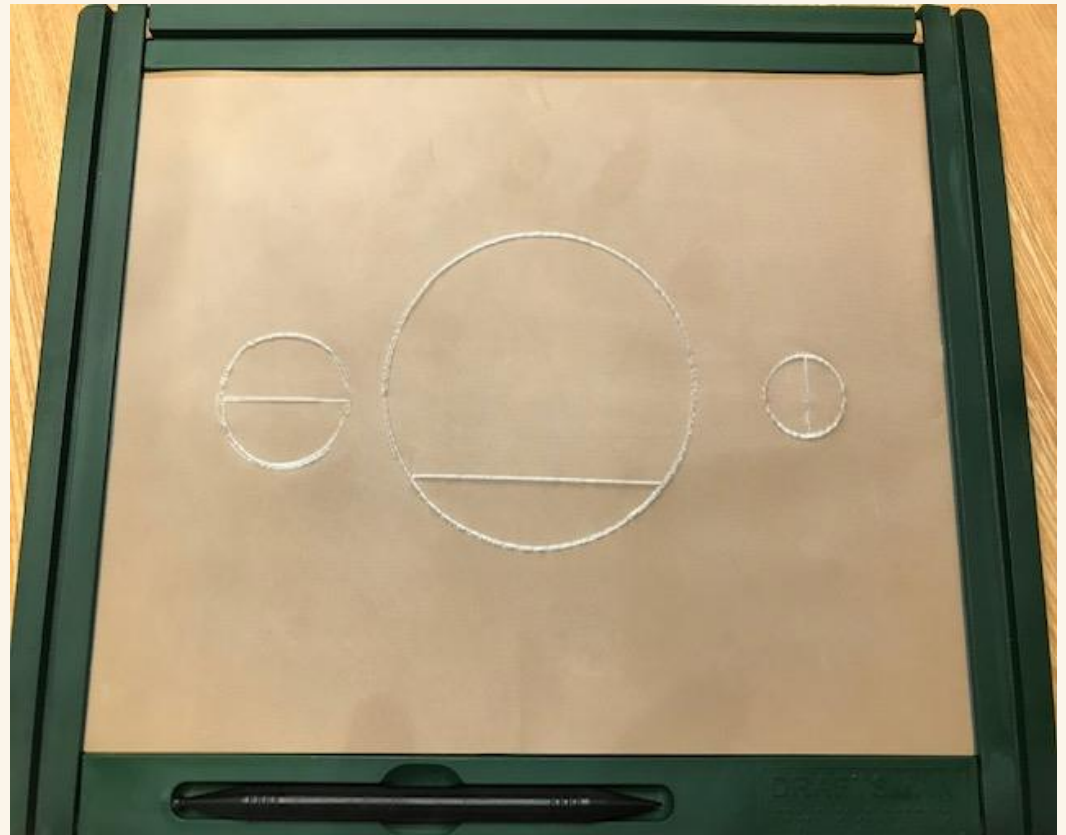
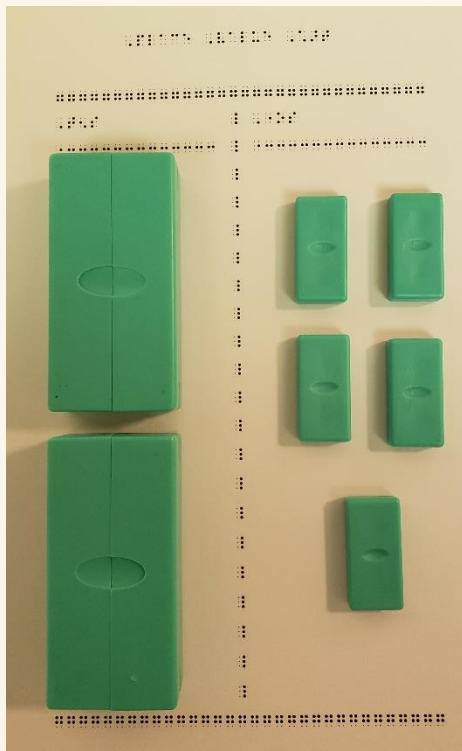
- Count and skip count
- Read and write numbers
- One more, one less, ten more, and ten less
- Concept of “0”
- Patterns that incorporate the general omission symbol
- Represent numbers with concrete materials, including base ten blocks or Digi-Blocks



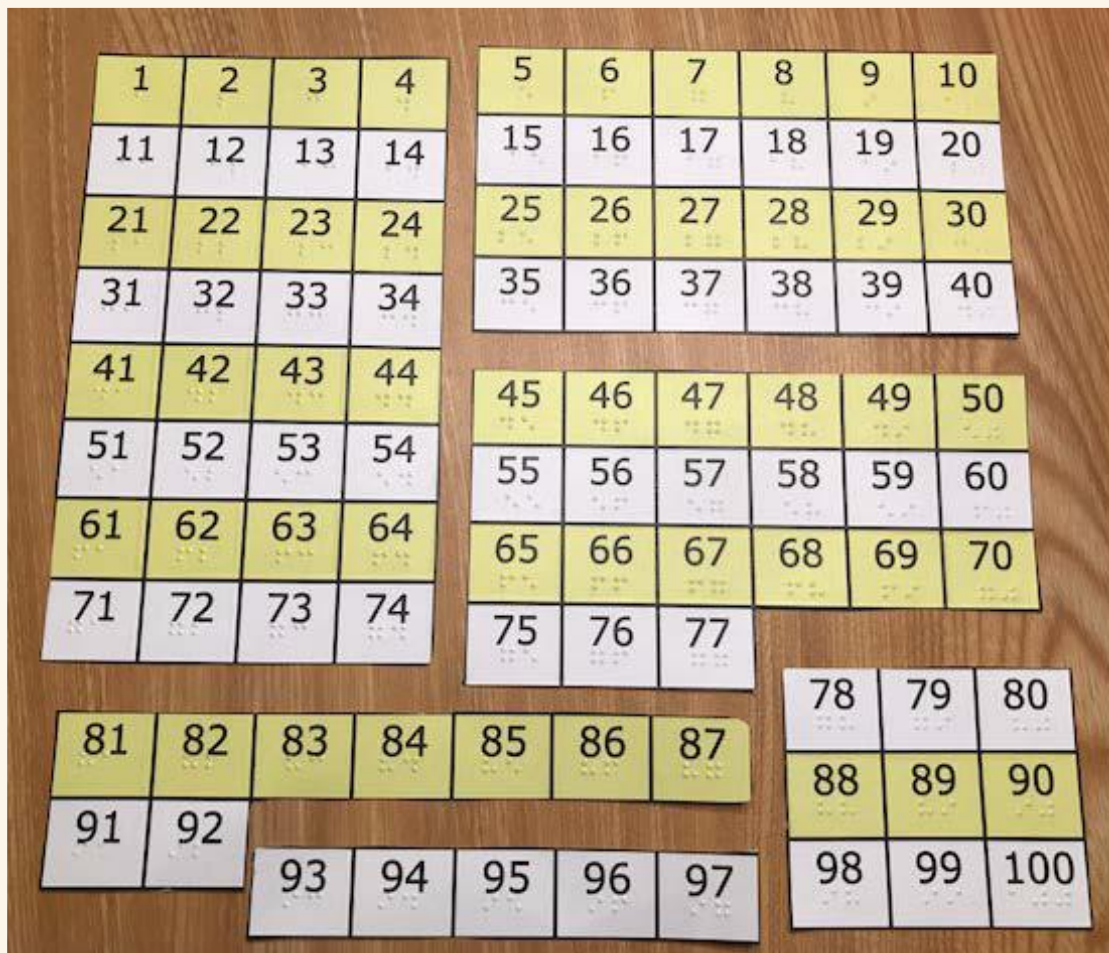
# More Examples of Making Connections to Math Concepts

- Tally marks
- How to number math problems
- Place Value Chart and Hundreds Chart
- Counting to 120 Chart
- Five-frame and Ten-frame
- Read, write, and solve grade level equations
- Compare two numbers and record the results of comparisons with the Nemeth symbols

# Let's Look at Sample Activities



# Rebuild a Hundreds Chart



# Sample Games

Let's Look at  
a Game

# Examples of Games

- Feed the Monster
- Maze
- Connect Four
- Find the Path
- Less Than, Greater Than, and Equals
- Secret Message Game
- Roll and Race Game
- Puzzle Pieces from the 120 Chart

# Where is the Database Located?

- Visit the webpage [Pearson Accessibility webpage](#)
- Click on Nemeth Braille Searchable Database
- Click on the Nemeth or math term you would like to select

# Searchable Database

- Glossary of terms used in math which are linked to a description of how to write each in Nemeth code related to that content.
- Several terms land you on the same description so if your terminology is slightly different, you still get the same description.
- Lots of examples from easy first to more complex later in the file.

# Searchable Database Samples

Includes the following:

- Nemeth in EBAE as a brf file for students
- Nemeth within UEB contexts as a brf file for students
- Nemeth in Print and SimBraille for teachers



# Searchable Database Contents

- Absolute Value
- Alpha (lowercase)
- Angle
- |
- Exponent
- Exponent of an exponent
- Fahrenheit
- |
- Vectors
- Wavelength
- Whole numbers

# Tutorial

- Learn keystrokes on navigating to a webpage and around a webpage
- Learn more about how the database is structured
- Practice looking up definitions and examples

# Nemeth Database Webpage

accessibility.pearson.com/nemethdatabase/



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## Welcome to the Nemeth Braille Searchable Database!

### Introduction

The purpose of this database is to allow individuals to look up Nemeth symbols and math related terms, using the words a student is used to hearing. These symbols and terms are listed after this introduction. Once you have found the symbol or term in the list (see [Instructions](#) for additional keystrokes to help you navigate the database), select that particular link, which will take you to a description of how the symbol, expressions, or equations are written in Nemeth code. At the end of the description, you will find three additional links to examples in Nemeth code. The first link takes you to a Braille Ready File (BRF) that includes samples using Nemeth code in English Braille American Edition (EBAE). The second link takes you to a BRF file that includes samples using Nemeth code within Unified English Braille (UEB) contexts. The third link takes you to a Microsoft Word document that includes samples in print and Simulated Braille (SimBraille), which adds shadow dots that can help sighted readers. We will continue to build this database and would welcome any comments or suggestions you might have for improving this database.

Sara Larkin, Susan Osterhaus, and Tina Herzberg

### List of Symbols and Math Terms

- [Absolute value](#)
- [Alpha \(lowercase\)](#)

# Searchable Database in Action

Let's Look at  
a Sample

**Try it out!**

What term or symbol would you like to look up?

Think algebra and geometry.

Other ideas?

# Let's Look at a Mini Lesson

- **Five-Step Rule**
  - **Modified Expressions**
  - **Exceptions**
  
- **Number Lines**

# Use With Other Products

- [Guidance for Nemeth with UEB Contexts, The Nemeth Braille Code for Mathematics and Science Notation, 1972 Revision, and updates](#)
- [APH Products](#) that support math instruction
- [Online APH Nemeth Tutorial](#)
- [\*Nemeth at a Glance\*](#)
- General math manipulatives
- Child's math textbook

# Contact Information

Sara Larkin

[sara.larkin@iaedb.org](mailto:sara.larkin@iaedb.org)

Susan Osterhaus

[susanosterhaus@tsbvi.edu](mailto:susanosterhaus@tsbvi.edu)

Tina Herzberg

[therzberg@uscupstate.edu](mailto:therzberg@uscupstate.edu)



**Let's hear from you!**

**Thank you for  
your attention.  
Now it's time for  
questions.**