Teaching Students the Nemeth Braille Code: Strategies and Resources
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Learning Objectives

The participants will be able to:

1. Identify three strategies that can be used to teach Nemeth code to students who read braille.
2. Make connections between learning the Nemeth code and learning math.
3. 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 and Kindergarten complete and ready to download at no cost
  - Incorporates fun facts about transportation
  - Other ECC skills addressed
- Higher grade levels use a searchable database
  - Available online to the public at no cost
  - Numerous examples

What's Coming!!

- 1st-5th grade curriculum
- Middle grade levels use multiple approaches
  - Searchable database with tutorial and numerous examples
  - Mini-lessons with accompanying games and activities
- Additional Nemeth and math terms in the searchable database
- Continuing to get input from students, parents, and teachers

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

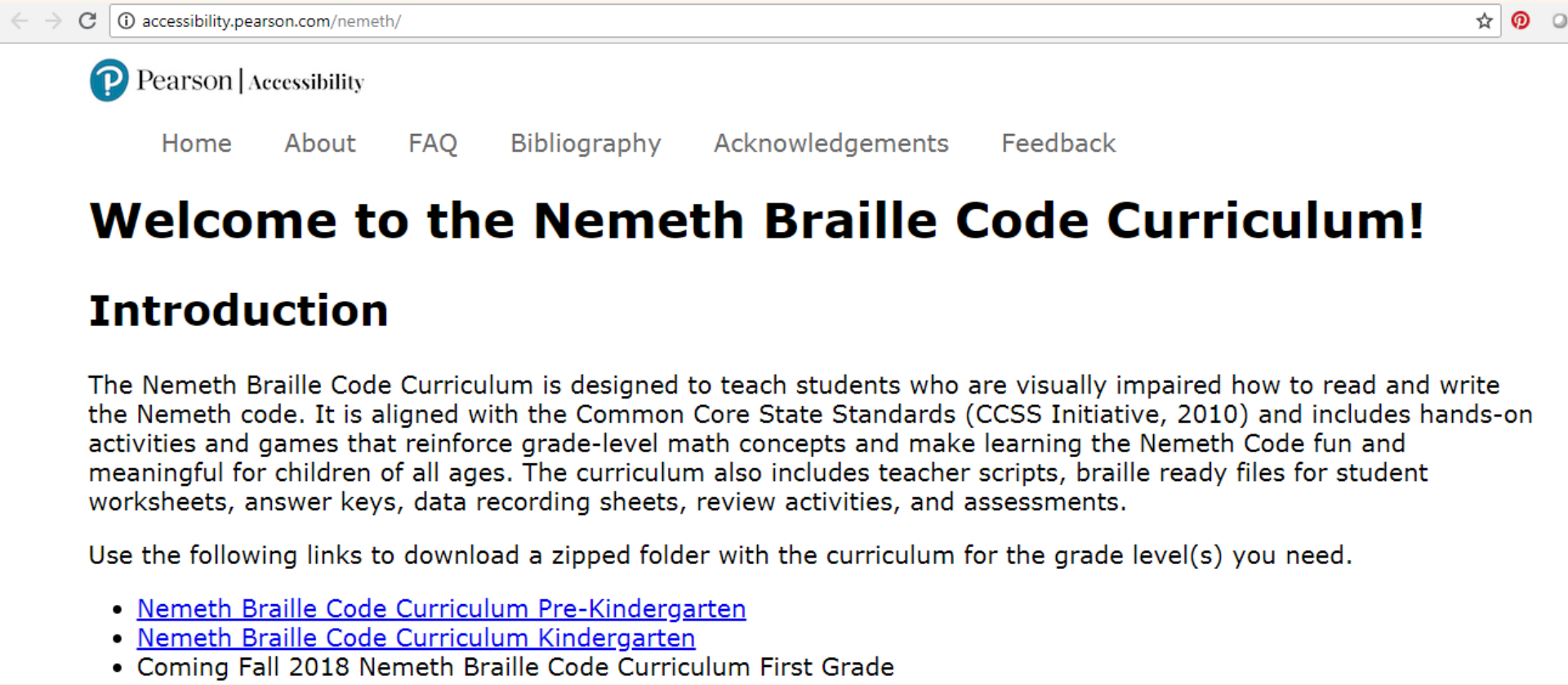
Cumulative Review and Posttest

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

What's New!

- Visit the webpage Pearson Accessibility webpage
- Click on Nemeth Braille Curriculum
- Click on the grade level you would like to download

Nemeth Curriculum Webpage



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

Progression of Reading Skills

- Build symbol on a swing cell or muffin tin
- Read the single symbol in braille
- Locate the symbol in a line of full cells/guide dots
- Locate more than one of the same symbol in a line of full cells/guide dots
- Locate the symbol in a line of previously learned symbols
- Read a symbol at the beginning of a line and match it to another symbol in the line

Progression of Writing Skills

- Build symbol on a swing cell
- Connect the dot configuration to the keys on the braillewriter
- Practice using correct finger positioning
- Practice writing the symbol several times
- Practice writing symbols as they are read aloud
- Practice writing the symbol in mathematical context

Examples of Making Connections to Math Concepts

- Count and skip count
- Read and write numbers
- Before, after, one more, and one less
- Numerical order
- Tally marks
- Concept of “0”
- Patterns that incorporate the general omission symbol

More Examples of Making Connections to Math Concepts

- Represent numbers with concrete materials, including base ten blocks or Digi-Blocks
- Mathematical comma for lists
- How to number math problems
- Place Value Chart and Hundreds Chart
- Read, write, and solve grade level equations
- Five-frame and Ten-frame

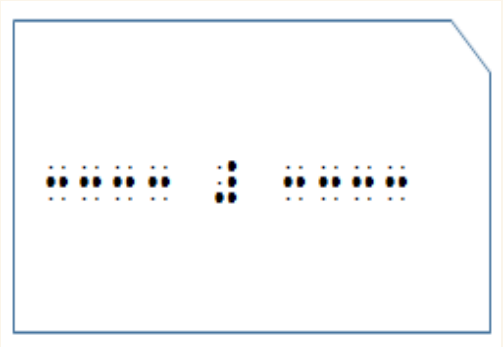
Samples of Teaching Tips

- It is important to use the correct finger on each key when learning new Nemeth symbols. This will help the student become accurate in their writing!
- When you initially introduce the numeral 0, explain that it means no objects in this activity.
- Using the braillewriter for some of the writing activities is encouraged as it facilitates the development of motor memory.
- Place flash cards and hard copy braille on a nonslip surface such as rubber shelf liner so they will not move as the student is reading.

Samples of Teaching Tips (cont.)

- Base ten blocks and Digi-Blocks are often used in elementary general education classrooms. If you do not have base ten blocks or Digi-Blocks, request to borrow them from a classroom teacher.
- There are multiple counting songs available online if you would like to incorporate music into the review of counting. Please note that by the end of kindergarten, a student should be able to count aloud to 100.
- Writing an equal sign – 2 fingers on the right hand, then 2 fingers on the left hand; 2 dots = 2 dots.

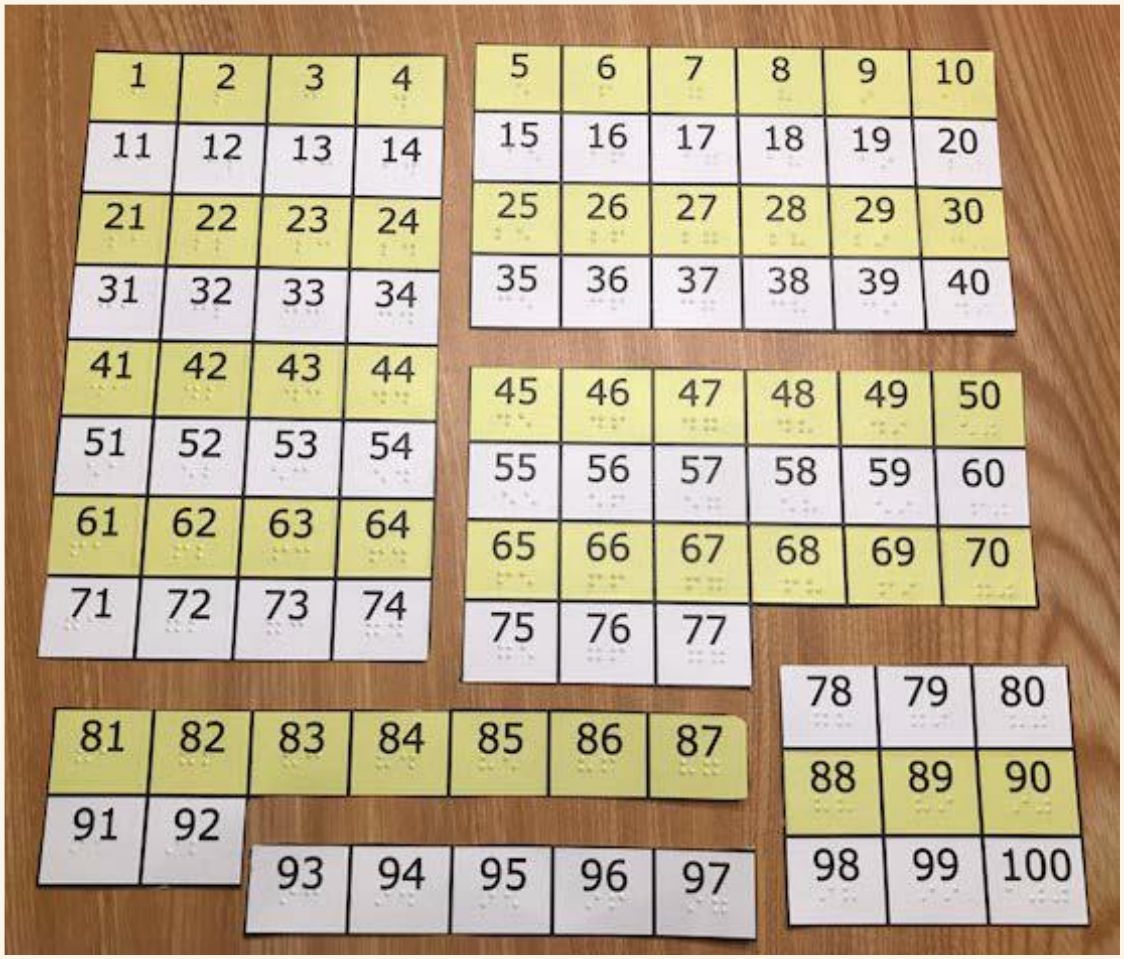
Let's Look at Sample Activities



Activity Examples

- Count using manipulatives
- Make a number train, a craft foam train, a shoebox train and/or an edible train
- Create a counting book from 1 to 10 by using objects that can be easily counted
- Locate the general omission symbol in several lines of braille and identify and write the missing number that the general omission symbol is representing
- Use a Grid Board to create a number chart

Rebuild a Hundreds Chart



Sample Games

Let’s Look at a Game

Examples of Games

- Number Search
- Bingo
- Feed the Monster
- Maze
- Guess My Number
- Connect Four
- Find the Path

What Else Is New?

- 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 brackets
- Exponent
- Exponent of an exponent
- Fahrenheit
- Vertical Bar
- Vector Notation
- 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/

Pearson | Accessibility

Home About FAQ Instructions Settings Feedback

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)
- Angle brackets
- Angle measure

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?

What's Next …

- More math content areas in the database, such as statistics and elementary math concepts (e.g. fractions)
- Additional examples
- More information related to keystrokes and settings

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

Let’s hear from you!

Thank you for your attention. Now it’s time for questions.