



## Braille Code Considerations Discussion Guide for Individualized Education Program (IEP) Teams

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

This discussion guide must be used in conjunction with the *Nemeth or Unified English Braille (UEB): Factors and Considerations for Math Code* to assist teachers of the blind/visually impaired (TBVI) and the Individualized Education Program (IEP) Team with determining the most appropriate braille code for instruction of subjects that require Science, Technology, Engineering and Math (STEM).

Nemeth is a braille code used for math and science notation developed in 1946 by Dr. Abraham Nemeth. In 1952, the Joint Uniform Braille Committee accepted Nemeth Code as the standard braille code for representing math and science expressions in the United States. In 2013, the International Council on English Braille added the ability to use Nemeth Code within UEB context to the Rules of Unified English Braille. The certification process for Nemeth Code transcribers and proofreaders in the United States is well defined and established.

Unified English Braille is one code for literary, mathematics, and computer science text elements that was adopted by the Braille Authority of North America (BANA) in 2014. The UEB technical code for math and science is part of UEB and is used in all grade levels; therefore the use of the term UEB indicates a complete code that includes math and other STEM subject notation. Although there are certification processes in other countries, a certification program for UEB Technical is still being developed in the United States.

## Factors to Consider

	Nemeth within UEB contexts	Unified English Braille (UEB)
Instruction	A student who has begun mathematics instruction using Nemeth will most likely benefit from the continued use of Nemeth to complete mathematics courses throughout the remainder of his or her school years.	The math symbols used in UEB (e.g., plus, equals, parentheses, dollar sign) are the same in both literary and mathematics text, thus, reducing the need for separate code instruction in mathematics. (This will not eliminate the need for more specific instruction of braille symbols in higher level STEM concepts.)
Instruction	A student who demonstrates minimal confusion with symbols (i.e., two separate braille symbols representing one print symbol depending on context) may benefit from math instruction in Nemeth.  (Data gathered from several observations/assessments demonstrating student performance with braille symbols should be used in making this determination.)	A student who has demonstrated confusion with symbols (i.e., two separate braille symbols representing one print symbol depending on context) may benefit from instruction in UEB.  (Data gathered from several observations/assessments demonstrating student performance with braille symbols should be used in making this determination.)
Cognitive Ability	Based on braille fluency data, a student who is able to efficiently transition from code to code may benefit from Nemeth.	Based on braille fluency data, a student who is unable to efficiently transition from code to code may benefit from UEB.
Cognitive Ability	A student may benefit from math instruction in Nemeth if instruction can be provided in both the code and math concepts simultaneously.	A student may benefit from math instruction in UEB if repetitive math symbols are consistently encountered across all subject areas in the curriculum.

	Nemeth within UEB contexts	Unified English Braille (UEB)
Interests and Aptitude	A student who is interested in higher level STEM subjects may benefit from Nemeth instruction given the traditional use of Nemeth in these areas and the availability of new and classic texts which have already been translated into Nemeth.	A student with high interest in STEM subjects may benefit from the use of UEB if the educational team determines that the consistency of using a single symbol for print symbols used in literary and primary / elementary level mathematics across subject texts would support building foundational STEM concepts.