

Arkansas Guidance Document for Considerations of Braille Math and Technical Subjects

The intent of this document is to assist the Individualized Education Program (IEP) team by providing factors to be considered and discussed for determining and recommending the most appropriate braille code for instruction in math and technical subjects per the student’s IEP. Unified English Braille (UEB) is one code for literacy, mathematics, and computer science text elements. The UEB technical code for math and science is part of the UEB code and is used in all grade levels; therefore, the use of the term UEB implies a complete code that includes math. UEB with Nemeth Code includes the Nemeth Code used within UEB context for math and technical materials.

Please consider the following factors in determining the most appropriate code for a student who receives braille instruction.

Factors	UEB Considerations	Nemeth Considerations
Cognitive Ability	Due to the student’s cognitive ability and current academic skills, he or she would benefit from the simplicity of one code across all contexts.	The student who does not require the simplicity of one code across contexts could benefit from Nemeth Code.
Instruction	<p>The student who is beginning to learn braille may benefit from learning one code.</p> <p>The student is included in a general education class in which the teacher does not know braille. The use of the UEB code facilitates a more streamlined use of technology in the general education setting because UEB more closely follows print.</p>	<p>The student who has been previously instructed in Nemeth Code prior to the adoption of UEB and/or demonstrates proficiency in the use of Nemeth Code within the context of UEB.</p> <p>The student is instructed by a teacher who is proficient in Nemeth Code and can provide instruction in both the code and math concepts simultaneously.</p>
Eye Condition, Prognosis, and Age of Onset	The student transitioning from print to braille may excel using UEB math, as it has a single symbol that is used in all contexts of braille. UEB most closely follows print.	The student, who is transitioning from visual to tactual math, may excel using Nemeth because of its streamlined nature requiring fewer cells, thus its ability to convey math concepts in a concise and efficient manner.
Interest and Aptitude	The student with high interest in technology may benefit from the use of UEB because of its ease of translation and compatibility with digital formats and braille-adaptive equipment.	The student with high interest in science and mathematics may benefit from the use of Nemeth since it is the traditional code used for accomplished scientists and mathematicians working in technical fields.
Braille Skills	The student who is frustrated and anxious by the multiple uses of a single braille symbol may find that use of UEB in mathematics can alleviate his or her concerns.	The student who is frustrated and anxious by the number of cells required to represent math texts may find Nemeth useful since it uses fewer symbols and is more compact.
Other	<p>Currently, fewer materials are available for math and technical subjects in UEB; thus, the student will have limited access to transcribed materials.</p> <p>Note: There is currently no transcription course for math and technical subjects in UEB approved through the Library of Congress. Therefore, few math or science textbooks will be available in UEB. If the student is instructed in UEB, the district will be responsible for material transcriptions.</p>	Currently, more Nemeth materials are readily available; therefore, the student will have greater access to a variety of materials. The majority of textbooks are transcribed in Nemeth code.

The IEP team will document the decision regarding the appropriate code for instruction in math and technical subjects on the Consideration of Special Factors Page on the IEP.

Resources:

2015 Indiana UEB Implementation Sub-Committee: Nemeth or UEB: Factors and Considerations for Math Code
 Braille Authority of North America: UEB Guidelines for Technical Material

Revision date: 02.13.2017