

Overview

As a parent or teacher who has learned contracted braille, you know that braille literacy skills increase independence and career opportunities for a student who is a braille user. Likewise, a critical factor in a student's success in math, science, and related topics is competence in the Nemeth Code. This code provides a conceptual framework for brailleing mathematical and scientific notations. By learning the basics of the Nemeth Code, you can help students who use braille develop mathematical skills that will serve them throughout their school years and beyond.

The goal of this course is to enable you to read and braille the basic symbols of the Nemeth Code. You do not need to learn the entire Nemeth Code in order to use it. Just as in print, an individual learns various mathematical symbols as they become relevant in the curriculum. This course presents many of the symbols used in rudimentary through early high school math and science. It is divided into twelve lessons. Included with

your course materials is a list of the rules given in the course and a list of Nemeth Code resources.

The information in this course does not enable you to professionally transcribe material from print to the Nemeth Code. To do so requires additional study and practice. Teachers and parents who are interested in continuing their studies may ask their instructor for information about braille and Nemeth Code transcribers' courses.

Many math teachers and parents of children who are visually impaired often ask about tactile displays and graphics. This topic is beyond the scope of this course, since tactile graphics are not part of the Nemeth Code. If you would like suggestions for resources that address tactile displays and graphics, ask your instructor.

The practice activities in each lesson are for your personal development only. Do not send your answers to your Hadley instructor. You can always contact your instructor, however, to either clarify these activities or discuss your work.

To complete this course you are required to submit twelve assignments, one at the end of each lesson. These assignments enable your instructor to assess your mastery of the material in the lessons.

If you're ready to start learning the Nemeth Code, begin Lesson 1: The Development and Uses of the Nemeth Code.

Lesson 1: The Development and Uses of the Nemeth Code

This lesson explains how the Nemeth Code was developed. It then explains how it is used, including the type of material transcribed into the Nemeth Code and the devices used to produce it. The ability to describe the development and uses of the Nemeth Code provides a good foundation for the study of the Nemeth Code itself.

Objectives

After completing this lesson, you will be able to

- a. briefly explain how the Nemeth Code was developed
- b. explain how the Nemeth Code is used and produced

The Development of the Nemeth Code

Dr. Abraham Nemeth, the developer of the Nemeth Code, is a mathematics professor. He is congenitally blind. As a child, he loved mathematics and wanted to pursue advanced mathematical studies. When he

reached high school, however, his counselors discouraged him from doing so because of his blindness. He followed their advice and majored in psychology in college. Nevertheless, he took as many mathematics courses as his curriculum would allow.

After graduating with a master's degree in psychology, Nemeth was unable to find satisfactory work in his profession. So he took various menial jobs while continuing his study of mathematics during the evenings. Observing his frustration, his wife suggested that she go to work while he study toward a Ph.D. in mathematics. Nemeth readily agreed that working in the subject he loved most would bring him rewards and satisfaction in life.

In 1946, as a graduate student at Columbia University in New York, Nemeth improvised ways of brailleing increasingly complex mathematical concepts. Once, a colleague who was blind asked Nemeth for a particular mathematical table in braille. Nemeth replied that he had such a table, but it was in his own private braille code. The colleague desperately needed the table, so he asked Nemeth to tutor him in the code. In a short

time the colleague was able to read all the notation, even the most difficult symbols. The precision and clarity of the code impressed him. He urged Nemeth to submit a paper describing the code and how it works to the organization that sets braille standards. In 1952, the Braille Authority of North America (BANA) adopted the code as The Nemeth Braille Code for Mathematics and Science Notation. It has been through several revisions since it was first accepted, and it has been adopted in many countries.

The Uses of the Nemeth Code

The Nemeth Code is used for any work that is mathematical or scientific (specifically mathematics, statistics, chemistry, and physics). Within the textual parts of a mathematical or scientific work, numbers and other symbols, such as parentheses, are written in the Nemeth Code. The formatting also follows the rules of the Nemeth Code.

Exceptions to the use of the Nemeth Code in mathematical or scientific writing occur on title pages, in page numbers (at the corners of pages), and at the

end of the page separation lines. Other exceptions are beyond the scope of this course.

The Nemeth Code is designed to represent print format as accurately as possible. Print problems that are written linearly (i.e., left to right as a sentence) in print appear linearly in the Nemeth Code. Print problems that appear spatially (i.e., values and operations spaced across from, above, or below one another on the page) appear spatially in the Nemeth Code. Spatial presentations usually involve computation. The difference between linear and spatial formats will become clear as you progress through this course.

The most common way to produce braille in the Nemeth Code is with a braillewriter. Using this device, the user can immediately check his or her work because the dots appear on the top side of the paper. Some students use a slate and stylus. The Brown slate has an outer frame enabling the user to read the braille without removing the paper. Other methods of embossing exist, including computers connected to embossers. If you would like additional information about devices for embossing, contact your instructor.

Summary

This lesson described the development of the Nemeth Code and explained how it is used. Before the existence of the Nemeth Code, many talented students were denied the opportunity to study in the compelling fields of math and science. Helping another person learn the Nemeth Code can open up possibilities for analytical learning that will last him or her a lifetime.

Assignment 1

For general instructions on completing assignments, refer to the Welcome Letter. Then start this assignment by giving your full name, address, and phone number. Also list the name of this course, Assignment 1, your instructor's name, and the date. Be sure to include the item number along with each answer.

1. Briefly describe how the Nemeth Code came to be and for what type of material it is used.
2. State your reasons for learning the Nemeth Code.

Once you have completed this assignment, proceed to Lesson 2: Numerals, Indicators, Roman Numerals, and Special Signs.