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Nota di contenuto	Cover; Contents; Acknowledgements; Copyright Permission Acknowledgements; 1 Mathematics as a Multisemiotic Discourse; 1.1 The Creation of Order; 1.2 Halliday's Social Semiotic Approach; 1.3 Mathematics as Multisemiotic; 1.4 Implications of a Multisemiotic View; 1.5 Tracing the Semiotics of Mathematics; 1.6 Systemic Functional Research in Multimodality; 2 Evolution of the Semiotics of Mathematics; 2.1 Historical Development of Mathematical Discourse; 2.2 Early Printed Mathematics Books; 2.3 Mathematics in the Early Renaissance; 2.4 Beginnings of Modern Mathematics: Descartes and Newton 2.5 Descartes' Philosophy and Semiotic Representations 2.6 A New World Order; 3 Systemic Functional Linguistics (SFL) and Mathematical Language; 3.1 The Systemic Functional Model of Language; 3.2 Interpersonal Meaning in Mathematics; 3.3 Mathematics and the Language of Experience; 3.4 The Construction of Logical Meaning; 3.5 The Textual Organization of Language; 3.6 Grammatical Metaphor and Mathematical Language; 3.7 Language, Context and Ideology; 4 The Grammar of Mathematical Symbolism; 4.1 Mathematical Symbolism; 4.2 Language-Based Approach to Mathematical Symbolism 4.3 SF Framework for Mathematical Symbolism 4.4 Contraction and Expansion of Experiential Meaning; 4.5 Contraction of Interpersonal Meaning; 4.6 A Resource for Logical Reasoning; 4.7 Specification of

Textual Meaning; 4.8 Discourse, Grammar and Display; 4.9 Concluding Comments; 5 The Grammar of Mathematical Visual Images; 5.1 The Role of Visualization in Mathematics; 5.2 SF Framework for Mathematical Visual Images; 5.3 Interpersonally Orientating the Viewer; 5.4 Visual Construction of Experiential Meaning; 5.5 Reasoning through Mathematical Visual Images
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7.1 Multisemiotic Analysis of a Contemporary Mathematics Problem
7.2 Educational Implications of a Multisemiotic Approach to Mathematics;
7.3 Pedagogical Discourse in Mathematics Classrooms; 7.4 The Nature and Use of Mathematical Constructions; References; Index; A; B; C; D; E; F; G; H; I; K; L; M; N; O; P; R; S; T; V; W

Sommario/riassunto

This book examines mathematical discourse from the perspective of Michael Halliday's social semiotic theory. In this approach, mathematics is conceptualized as a multisemiotic discourse involving language, visual images and symbolism. The book discusses the evolution of the semiotics of mathematical discourse, and then, proceeds to examine the grammar of mathematical symbolism, the grammar of mathematical visual images, intersemiosis between language, visual images and symbolism and the subsequent ways in which mathematics orders reality. The focus of this investigation is written mathema
