1.	Record Nr.	UNINA9910886999903321
	Autore	Müller-Stach Stefan
	Titolo	The Code of Mathematics : Proof and Truth / / by Stefan Müller-Stach
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2024
	ISBN	3-662-69483-2
	Edizione	[1st ed. 2024.]
	Descrizione fisica	1 online resource (177 pages)
	Collana	Mathematics Study Resources, , 2731-3832 ; ; 11
	Disciplina	510
	Soggetti	Mathematics Mathematics - Philosophy Philosophy of Mathematics
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Fundamental Questions -- Scientific Languages -- Mathematical Thinking -- Mathematics in our Culture -- Computability and Decidability -- Deductive Systems and Incompleteness -- Category Theory -- Type Theory -- Semantics and Reality.
	Sommario/riassunto	Inspired by recent developments in dependent type theory and infinity categories, this book presents a history of ideas around the topics of truth, proof, equality and equivalence. Besides selected ideas of Platon, Aristoteles, Leibniz, Kant, Frege and others, the results of Gödel and Tarski on incompleteness, undecidability and truth in deductive systems and their semantic models are covered. The main focus of this textbook is on dependent type theory and its recent variant homotopy type theory. Such theories contain identity types, which give a new understanding of equality, symmetry, equivalence and isomorphism in a conceptual way. The interaction of type theory and infinity category theory yields a new paradigm for a structural view on mathematics. This supports the tendencies towards formalising mathematics with the help of proof assistants. The Author Stefan Müller-Stach is Vice President for Research and Early Career Academics at Johannes Gutenberg University Mainz and professor for number theory. His main research focus is on algebraic and arithmetic geometry, mathematical physics and history of science. This book was first published in