

1. Record Nr.	UNINA9910255156803321
Autore	Monaghan John
Titolo	Tools and Mathematics // by John Monaghan, Luc Trouche, Jonathan M. Borwein
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-02396-9
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (497 p.)
Collana	Mathematics Education Library, , 0924-4921 ; ; 110
Disciplina	510
Soggetti	Mathematics—Study and teaching Mathematics Education
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Preface.- 1.Introduction to the book -- 2.Doing mathematics with tools: one task, four tools -- 3.The life of modern Homo Habilis Mathematicus: Experimental computation and visual theorems.- 4. Tools, human development and mathematics .- 5.The development of mat hematics practices in the Mesopotamian scribal schools -- 6. Discussions of Part A chapters.- 7. Developments relevant to the use of tools in mathematics -- 8.Constructionism -- 9.Activity theoretic approaches.- 10.Didactics of mathematics: concepts, roots, interactions and dynamics from France.- 11.Discussion of issues in chapters in Part B -- 12.Integrating tools as an ordinary component of the curriculum in mathematics education.- 13.The calculator debate. - 14. Tools and mathematics in the real world.- 15.Mathematics teachers and digital tools.- 16. Tasks and digital tools.- 17.Games: artefacts in gameplay.- 18.Connectivity in mathematics education: Drawing some lessons from the current experiences and questioning the future of the concept.- Epilogue.
Sommario/riassunto	This book is an exploration of tools and mathematics and issues in mathematics education related to tool use. The book has four parts. The first part sets the scene with a reflection on doing a mathematical task with different tools, a mathematician's account of tool use in his work and historical considerations of tool use. The second part opens

with a broad review of technology and intellectual trends, circa 1970, and continues with three case studies of approaches in mathematics education and the place of tools in these approaches. The third part considers issues related to mathematics instructions: curriculum, assessment and policy; the calculator debate; mathematics in the real world; and teachers' use of technology. The final part looks to the future and digital tools: task design; the importance of artefacts in gameplay; and new forms of activity via connectivity.
