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Titolo	The number sense [[electronic resource] ] : how the mind creates mathematics // Stanislas Dehaene
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Edizione	[Rev. and updated ed.]
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Soggetti	Number concept Mathematics - Study and teaching - Psychological aspects Mathematical ability
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Machine generated contents note: -- Preface to the Revised and Expanded Edition -- Preface to the First Edition -- Introduction -- Part I: Our Numerical Heritage -- Chapter 1: Talented and Gifted Animals -- Chapter 2: Babies Who Count -- Chapter 3: The Adult Number Line -- Part II: Beyond Approximation -- Chapter 4: The Language of Numbers -- Chapter 5: Small Heads for Big Calculations -- Chapter 6: Geniuses and Prodigies -- Part III: Of Neurons and Numbers -- Chapter 7: Losing Number Sense -- Chapter 8: The Computing Brain -- Chapter 9: What Is a Number? -- Epilogue. The Contemporary Science of Number and Brain -- Appendix -- Notes and References -- Bibliography -- Main books consulted -- Useful web resources -- Detailed bibliography -- Index.
Sommario/riassunto	"Our understanding of how the human brain performs mathematical calculations is far from complete, but in recent years there have been many exciting breakthroughs by scientists all over the world. Now, in The Number Sense, Stanislas Dehaene offers a fascinating look at this recent research, in an enlightening exploration of the mathematical mind. Dehaene begins with the eye-opening discovery that animals--

including rats, pigeons, raccoons, and chimpanzees--can perform simple mathematical calculations, and that human infants also have a rudimentary number sense. Dehaene suggests that this rudimentary number sense is as basic to the way the brain understands the world as our perception of color or of objects in space, and, like these other abilities, our number sense is wired into the brain. These are but a few of the wealth of fascinating observations contained here. We also discover, for example, that because Chinese names for numbers are so short, Chinese people can remember up to nine or ten digits at a time--English-speaking people can only remember seven. The book also explores the unique abilities of idiot savants and mathematical geniuses, and we meet people whose minute brain lesions render their mathematical ability useless. This new and completely updated edition includes all of the most recent scientific data on how numbers are encoded by single neurons, and which brain areas activate when we perform calculations. Perhaps most important, *The Number Sense* reaches many provocative conclusions that will intrigue anyone interested in learning, mathematics, or the mind. "A delight." --Ian Stewart, *New Scientist* "Read *The Number Sense* for its rich insights into matters as varying as the cuneiform depiction of numbers, why Jean Piaget's theory of stages in infant learning is wrong, and to discover the brain regions involved in the number sense." --*The New York Times Book Review* "Dehaene weaves the latest technical research into a remarkably lucid and engrossing investigation. Even readers normally indifferent to mathematics will find themselves marveling at the wonder of minds making numbers." --*Booklist*--

"Our understanding of how the human brain performs mathematical calculations is far from complete. In *The Number Sense*, Stanislas Dehaene offers readers an enlightening exploration of the mathematical mind. Using research showing that human infants have a rudimentary number sense, Dehaene suggests that this sense is as basic as our perception of color, and that it is wired into the brain. But how then did we leap from this basic number ability to trigonometry, calculus, and beyond? Dehaene shows that it was the invention of symbolic systems of numerals that started us on the climb to higher mathematics. Tracing the history of numbers, we learn that in early times, people indicated numbers by pointing to part of their bodies, and how Roman numerals were replaced by modern numbers. On the way, we also discover many fascinating facts: for example, because Chinese names for numbers are short, Chinese people can remember up to nine or ten digits at a time, while English-speaking people can only remember seven. A fascinating look at the crossroads where numbers and neurons intersect, *The Number Sense* offers an intriguing tour of how the structure of the brain shapes our mathematical abilities, and how math can open up a window on the human mind"--

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