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Titolo	Learn to program with Scratch : a visual introduction to programming with games, art, science, and math / / by Majed Marji ; publisher William Pollock ; production editor Alison Law ; cover illustration Tina Salameh
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Soggetti	Scratch (Computer program language) Computer programming Computer games - Programming Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Note generali	Includes index.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Learn to Program with Scratch: A Visual Introduction to Programming with Games, Art, Science, and Math -- About the Author -- About the Technical Reviewer -- Acknowledgments -- Introduction -- Whom This Book Is For -- A Note to the Reader -- Features -- Organization of This Text -- Conventions Used -- Online Resources -- Errata and Updates -- 1. Getting Started -- What Is Scratch? -- Scratch Programming Environment -- The Stage -- Sprite List -- Blocks Tab -- Scripts Area -- Costumes Tab -- Sounds Tab -- Backdrops Tab -- Sprite Info -- Toolbar -- Paint Editor -- Setting the Center of an Image -- Setting Transparent Color -- Your First Scratch Game -- Step 1: Prepare the Backdrop -- Step 2: Add the Paddle and Ball -- Step 3: Start the Game and Get Your Sprites Moving -- Step 4: Spice It Up with Sound -- Scratch Blocks: An Overview -- Arithmetic Operators and Functions -- Arithmetic Operators -- Random Numbers -- Mathematical Functions -- Summary -- Problems -- 2. Motion and Drawing -- Using Motion Commands -- Absolute Motion -- Relative

Motion -- Other Motion Commands -- Pen Commands and Easy Draw -- The Power of Repeat -- Rotated Squares -- Exploring with Stamp -- Scratch Projects -- Get the Money -- Catching Apples -- More on Cloned Sprites -- Summary -- Problems -- 3. Looks and Sound -- The Looks Palette -- Changing Costumes to Animate -- Sprites That Speak and Think -- Image Effects -- Size and Visibility -- Layers -- The Sound Palette -- Playing Audio Files -- Playing Drums and Other Sounds -- Composing Music -- Controlling Sound Volume -- Setting the Tempo -- Scratch Projects -- Dancing on Stage -- Fireworks -- Summary -- Problems -- 4. Procedures -- Message Broadcasting and Receiving -- Sending and Receiving Broadcasts -- Message Broadcasting to Coordinate Multiple Sprites -- Creating Large Programs in Small Steps. Creating Procedures with Message Broadcasting -- Building Your Own Block -- Passing Parameters to Custom Blocks -- Using Nested Procedures -- Working with Procedures -- Breaking Programs Down into Procedures -- Building Up with Procedures -- Summary -- Problems -- 5. Variables -- Data Types in Scratch -- What's in the Shape? -- Automatic Data Type Conversion -- Introduction to Variables -- What Is a Variable? -- Creating and Using Variables -- The Scope of Variables -- Changing Variables -- Spider Web -- Pinwheel -- Variables in Clones -- Displaying Variable Monitors -- Using Variable Monitors in Applications -- Simulating Ohm's Law -- Demonstrating a Series Circuit -- Visualizing a Sphere's Volume and Surface Area -- Drawing an n-Leaved Rose -- Modeling Sunflower Seed Distribution -- Getting Input from Users -- Reading a Number -- Reading Characters -- Performing Arithmetic Operations -- Summary -- Problems -- 6. Making Decisions -- Comparison Operators -- Evaluating Boolean Expressions -- Comparing Letters and Strings -- Decision Structures -- The if Block -- Using Variables as Flags -- The if/else Block -- Nested if and if/else Blocks -- Menu-Driven Programs -- Logical Operators -- The and Operator -- The or Operator -- The not Operator -- Using Logical Operators to Check Numeric Ranges -- Scratch Projects -- Guess My Coordinates -- Triangle Classification Game -- Line Follower -- Equation of a Line -- Other Applications -- Summary -- Problems -- 7. Repetition: A Deeper Exploration of Loops -- More Loop Blocks in Scratch -- The repeat until Block -- Building a forever if Block -- Stop Commands -- Ending a Computational Loop -- Validating User Input -- Counters -- Check a Password -- Counting by a Constant Amount -- Revisiting Nested Loops -- Recursion: Procedures that Call Themselves -- Scratch Projects -- Analog Clock -- Bird Shooter Game. Free-Fall Simulation -- Projectile Motion Simulator -- Other Applications -- Summary -- Problems -- 8. String Processing -- Revisiting the String Data Type -- Counting Special Characters in a String -- Comparing String Characters -- String Manipulation Examples -- Igpay Atinlay -- Fix My Spelling -- Unscramble -- Scratch Projects -- Shoot -- Binary to Decimal Converter -- Hangman -- Fraction Tutor -- Summary -- Problems -- 9. Lists -- Lists in Scratch -- Creating Lists -- List Commands -- Add and Delete -- Insert and Replace -- Accessing List Elements -- The Contains Block -- Bounds Checking -- Dynamic Lists -- Filling Lists with User Input -- Creating a Bar Chart -- Numerical Lists -- Finding Min and Max -- Finding the Average -- Searching and Sorting Lists -- Linear Search -- Frequency of Occurrence -- Bubble Sort -- Finding the Median -- Scratch Projects -- The Poet -- Quadrilateral Classification Game -- Math Wizard -- Flower Anatomy Quiz -- Other Applications -- Summary -- Problems -- A. Sharing and Collaboration -- Creating a Scratch Account -- Using the

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Remixing a Project -- The Project Page -- Sharing Your Project --
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Sommario/riassunto

By offering a methodical guide to all of Scratch's surprisingly powerful features, Learn to Program with Scratch gives you a firm grasp on the fundamental principles of programming in any language.
