

# LIVING MATH THROUGH HISTORY

## Cycle 1 Tentative Primary Level Booklist


### History Quarter Unit 2: The Alexandrians and Medieval Mathematics

If using book lists without purchasing plans, please consider purchasing books through the Amazon affiliate links on the Living Math site to benefit Living Math, or enter through <http://www.amazon.com/exec/obidos/redirect-home/livingmath-20>

 **Joy of Mathematics** by Theoni Pappas. Math vignettes to inspire exploration

 **Math Talk Poetry in Two Voices** by Theoni Pappas. Poetry in two voices

 **Mathematicians Are People, Too Vol. 1** by Luetta Reimer

 **Math History readers: One or more**, according to your child's ability:


**How Did Numbers Begin?** by Mindel & Harry Sitomer. Great resource on the beginning of numbers, but is out of print and can be hard to find. Another very nice one is **Numbers Old and New** by Irving and Ruth Adler, also out of print.


**The History of Counting** by Denise Schmandt-Besserat.

**From Zero to Ten** by Vivian French. A cartoon type resource with humor.

**Go Figure!** by Johnny Ball: DK style book, not nearly as much text or story telling, has outstanding pictures

**The Wonderful World of Mathematics** Lancelot Hogben. This is a classic you'll see listed on many math reading lists, older style of writing, nice book but may be too advanced for kids in this age group.


 **MathFocus: Mr. Base Ten Invents Mathematics** by Bethany H. Tucker. Very simple story-based math.


 **Science in the Past Series** used throughout: history of ancient science w/ chapters on mathematics. These are short books with lots of pictures. **Ancient Rome** and **Early Islamic Culture** are used in this quarter.

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 Optional Historical Context - **Story of the World Vols. 1 and 2** by Susan Wise Bauer and/or **Ten Kings** by Milton Meltzer

 **Of Numbers And Stars: The Story of Hypatia** by D. Anne Love and Pam Paparone, picture book story of Hypatia, very easy and nicely illustrated

 **Equal Schmequal** by Virginia Kroll - concept of balance and ways to classify


 **MathFocus: Roman Numerals I to MM** by Arthur Geisart and/or **Roman Numerals** by David Adler, both are excellent


 **MathFocus: MathStart** by Stuart Murphy: **Safari Park** (Finding Unknowns L.3)

 **Rome Antics and City: A Story of Roman Planning and Construction** by David Macaulay, these books show history in the context of buildings, the drawings are very good illustrations of geometric principles in life. The first one is for younger children.


 Historical Context: **The Egyptian News** by Scott Steedman (section on Alexandria)

**The Roman News** by Andrew Langley (tabloid-style history reader)

 **MathFocus Greg Tang Picture books:** Greg Tang's books show ways of naturally grouping to find mathematical solutions, often through regrouping. This is an algebraic idea. Books highly recommended are **Math For All Seasons**, **Math Fables** and **Math-Terpieces**. More challenging: **Math Appeal**.


 **Volume 2 of the Mathematicians Are People Too**, Two bios in this volume apply to these lessons, but this is the spine for Cycle 2, so if you are watching cost you can skip it.


 **Nine Animals and the Well** by James Rumford, nice picture book story about animals inventing our numerals.

 **Number Art: Thirteen 123s From Around the World** by Leonard Fisher, beautifully illustrated book showing similarities and differences between numerals. Another option is **The True Book of Numbers** by Philip Carona, story-like read.


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 **MathFocus** *One Grain of Rice*, Demi and /or *The King's Chessboard*, David Birch - Two versions of the classic tale of doubling, one set in India, one in Persia.

 **MathFocus** Picture books on doubling to complement the above:  
**512 Ants on Sullivan Street** - Hello Math  
**Minnie's Diner** by Dayle Ann Dodds, very fun story with a surprise ending

 **MathFocus:** MathStart by Stuart Murphy, **Earth Day-Hooray!** (Place Value L. 3)

 *Advanced* **The Man Who Counted**, Malba Tahan Some stories are fun and can be read aloud to older children in this group.

 History context: **Alphabetical Order: How the Alphabet Began** by Tiphane Samoyault


 **MathFocus: Zero: Is it Something? Is it Nothing?** by Claudia Zaslavsky, very simple introduction to concepts of zero. Two alternates are **Zero Is Something** by Marnie Luce and **Zero Is Not Nothing** (Young Math Books) Mindel Sitomer

 **MathFocus: A Place for Zero** by Angeline Sparagna LoPresti, story basis for understanding properties of zero

 **MathFocus:** MathStart by Stuart Murphy **Less Than Zero** (Negative Numbers L.3)  
- see Math Activities

 **MathFocus: Anno's Hat Tricks**, Mitsumasa Anno - Ties with the Joy of Math  
**Three Men Facing the Wall** story, Logic


 **Mosque**, by David Macaulay

 Additional Suggested Reading - Picture books on the period theme: **Demi's** books fit this period, and involve more logic than math. Try: *The Donkey and the Rock*, *The Greatest Gift*, *Liang and the Magic Paintbrush*, *The Greatest Treasure*

 **MathFocus:** MathStart by Stuart Murphy: **A Fair Bear Share** (Addition with regrouping L. 2, very nicely done)

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 **MathFocus** Readers on Measurement and Conversions Theme:

**The Long and Short of Measurement** by Vicki Cobb

More advanced: **How Much, How Many, the Story of Weights and Measures**  
by Jeanne Bendick

**Millions to Measure**, David Schwartz

**Lulu's Lemonade** by Barbara deRubertis (English volume conversions)

**Hershey's Chocolate Weights and Measures** by Jerry Pallotta

Hello Math: **Slower Than A Snail** (for younger children) L. 2

**The Fattest, Tallest, Biggest Snowman Ever** by Bettina Ling (L.3)

**What's Up With That Cup** by Sheila Keenan (L. 2)

MathStart by Stuart Murphy: **Just Enough Carrots** (Comparing Amounts L.1)

**The Best Bug Parade** (Comparing Sizes L. 1)

**Super Saturday Sand Castle** (Measuring L.2)

 **Readers on Measurement and Conversions Theme**, less math focus, more conceptual:

**How Big is a Foot?** By Rolf Myller

**Jim and the Beanstalk**, Raymond Briggs, fun measurement story


**Inch by Inch** Leo Lionni, classic picture book for younger children


**Inchworm and a Half** by Elinor J. Pinczes

 **Cathedral and Castle** by David Macaulay

 **Rabbits, Rabbits Everywhere, A Fibonacci Tale** by Ann McCallum - Really fun and clever story built around Fibonacci's Rabbit riddle

 **MathFocus** **Wild Fibonacci: Nature's Secret Code Revealed** by Joy N. Hulme

 **MathFocus** **Right in Your Own Backyard Nature Math**, Time Life "I Love Math" series (out of print, but there seems to be a steady supply of affordable used copies available)

 **MathFocus** **Math Curse** by Jon Scieska and Lane Smith, fun book for older children in this group (the teacher's name is Mrs. Fibonacci).

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**DaVinci:** When we study an individual like this, we usually select several sources as some will emphasize his art, some his science, some his life and times.

### Children's Biographies:

**The Genius of Leonardo** by Guido Visconti, contains quotations from Leonardo's notebooks

**Leonardo, Beautiful Dreamer**, by Robert Byrd

**Leonardo da Vinci** by Diane Stanley

**DaWild, DaCrazy, DaVinci** - Easy Time Warp Trio chapter book by Jon Scieszka, author of Math Curse

### Stories Based on DaVinci's Life:

**Uh - Oh, Leonardo!** Adventures of Providence Traveler by Robert Sabuda

**Leonardo's Horse** by Jean Fritz

**Leonardo and the Flying Boy**, by Laurence Anholt

### Advanced Sources

**Leonard da Vinci for Kids: His Life and Ideas**, by Janis Herbert - Advanced text but nice photos and includes 21 activities



**MathFocus:** MathStart by Stuart Murphy **Let's Fly A Kite** (Symmetry L.2)



**MathFocus:** **3D 2D 1D** by David Adler - Nice book about dimensions and related concepts like volumes.



Math and Art Concept Readers - Any that you have access to

**Zoom and Re-Zoom**, by Istvan Banyai

**Reflections and Round Trip** by Ann Jonas - These are very cleverly done

**Art Fraud Detective: Spot the Difference, Solve the Crime!** by Anna Nilsen and the companion on Modern Art, **The Great Art Scandal**.

**Seen Art?** By Jon Scieszka - just for fun if you like this author



**MathFocus** Readers for 100 properties

MathStart by Stuart Murphy **100 Days of Cool** (Numbers 1-100 L.2); Suggest reviewing with **Earth Day-Hooray** on place value with 10s

**One Hundred Ways to Get to 100** by Jerry Pallotta

**One Hundred Hungry Ants** by Elinor Pinzces - ways to arrange 100

**Hundred Shoes** by Charles Ghigna, easy reader

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**The Very Rich Lady and her One Hundred Dogs** by Chinlun Lee - In the story the lady names (as will you) all 100 dogs, this has been a favorite here for years



**MathFocus Piece = Part = Portion: Fractions = Decimals = Percents** by Scott Gifford



**MathFocus: The Number Devil** by Hans Magnus Enzensberger



**MathFocus Dr. Wright's Kitchen Table Math Book 1** by Chris Wright, PhD, published by Art of Problem Solving. Parent resource for teaching math in natural ways. See AoPS for TOC, excerpts and to order.

[http://www.artofproblemsolving.com/Books/AoPS\\_B\\_Item.php?page\\_id=91](http://www.artofproblemsolving.com/Books/AoPS_B_Item.php?page_id=91)

### Readers on Skip Counting and Multiplication Theme

#### Skip Counting

**Arctic Fives Arrive** by Elinor Pinczes - Skip counting by fives

**Far North in the Arctic, Counting Alaska's Animals** by Cory Cooper Hansen

**The Doorbell Rang** by Pat Hutchins - Skip counting by 2s, 3s, 4s and 6s as the kids divide the cookies among more and more guests

**Each Orange Had 8 Slices** Paul Giganti, Jr - Counting book with skip counting and grouping ideas

MathStart **Spunky Monkeys on Parade** (Counting by 2s, 3s and 4s L.2)

Hello Math: **Just Add Fun!** Rocklin; **Too Many Cooks!** by Andrea Buckless

**Ready or Not, Here I Come!** Counting to 100 by 1s, 2s, 5s, 10s and 20's

**The Grapes of Math** and **Math Appeal** by Greg Tang - grouping, skip counting

**Elsie Times Eight** by Natalie Babbitt, a girl is multiplied by 8 by a inept fairy

**The King's Commissioners** (Brainy Day Books) by Aileen Friedman

**The M&M's Count to One Hundred Book** by Barbara Barbieri McGrath

**One, Two, Skip a Few! First Number Rhymes** by Roberta Arenson

#### Multiplication Ideas

**Amanda Bean's Amazing Dream: A Mathematical Story** Cindy Neuschwander - Our favorite introduction to multiplication as fast counting

**The Best Of Times** by Greg Tang

MathStart Readers by Stuart Murphy: **Double the Ducks** (Doubling L. 1)

**Too Many Kangaroo Things to Do!** (Multiplication L.3)

**Bunches of Bunnies** by Louise Mathews, introduction to multiplication

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**2 X 2 = Boo!** A Set of Spooky Multiplication Stories by Loreen Leedy, not that spooky :o)

### More Advanced Multiplication Resources, Squares and Doubling

**Socrates and the Three Little Pigs** by Mitsumasa Anno - advanced concepts, but can use for multiplication and skip counting

**Multiplying Menace: The Revenge Of Rumpelstiltskin** by Pam Calvert

**Sea Squares** by Joy Hulme - square numbers

**My Full Moon is Square** by Elinor Pinczes - Intro to square numbers

**Minnies Diner** by Dayle Ann Dodds, fun story on doubling

**The 512 Ants on Sullivan Street** by Losi, L. 4 - Doubling sequence

**Marvelous Multiplication: Games and Activities that Make Math Easy and Fun** by Lynette Long

**Senefer: A Young Genius in Old Egypt** by Beatrice Lumpkin - Senefer learns the Egyptian way of addition and multiplication using the Egyptian doubling system.

Any math reader with regular visual patterns is good for practicing skip counting and multiplication, as rows, columns or other regular layouts lend themselves to seeing multiplication in this way. *Amanda Bean and Spaghetti and Meatballs for All!* are good examples.