

Living Math!

BOOK LIST FOR LIVING MATH LESSON PLANS

Cycle 1, Unit 1 (C1U1) Primary Level

Ancients and Early World Cultures

Resources Used In Multiple Lessons and Units

The **parent introduction letter** has a great deal of information on math activity books used in multiple units. It is not necessary to purchase all of these. Use this information to determine which resources are appropriate for your family.

Note: This Unit's book list is lengthier than any other unit. There are many quality literature sources available for early mathematics history topics, and there are more topical themes in this unit than others (**Money, Time, Addition and Subtraction are themes with teaching book lists included**). How much of the topical literature you use will be your decision, based on time and availability. The lists include many options to provide choices for individuals limited by library selections or purchasing restrictions.



Best done with two or more people



Book resource in print and/or online



Contains printable handout(s)



Highly visual resource, pictures





Video resource



Contains hands on activity(s)



Joy of Mathematics and  **Math Talk Poetry in Two Voices** by Theoni Pappas, and  **Mathematicians Are People, Too Volume 1** by Luetta Reimer are used in all four Units of Living Math Through History, Cycle 1.



Math history readers: Again, it is not necessary to purchase all of these. There are a number of different styles, choose what fits well with your family.

Number Stories from Long Ago by David Eugene Smith, written in 1919 in a story-telling style similar to *The Story of the World*. This book is available online at <http://books.google.com/books> for free, or a print copy can be purchased. There are not many pictures in this, nice to use in conjunction with a more visual resource.

How Did Numbers Begin? by Mindel and 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.

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The Secret Life of Math 👁 by Ann McCallum, lots of activities in this one.

Why Pi? and **Think of a Number** 👁 by Johnny Ball. Both are very nice for this lesson. DK style books, less text or story telling and more short vignettes, very colorful with lots of pictures. Both have history, but **Why Pi?** is more math history oriented, **Think of a Number** has more math.



The History of Counting by Denise Schmandt-Besserat


From Zero to Ten by Vivian French. More of a cartoon type resource with humor.


The Wonderful World of Mathematics 👁 by Lancelot Hogben. For the oldest kids in Primary, requires a parent to paraphrase, there is quite a bit of small print text.

Historical Connections In Mathematics by Wilbert and Luetta Reimer. Many of these activities will be above Primary level, but some can be adapted as indicated in the lesson plans. For families using multiple levels. Volume 1 - Pythagoras and Archimedes; Volume 2 - Thales; Volume 3 - Eratosthenes.

Mathematics by Irving Adler, lots of activities in this one.


  👁 **Secrets in Stone: All About Maya Hieroglyphs** - Check the last page for hieroglyphics stencil master and codes. Note re **Secrets in Stone**: The book refers to Mayan rituals including human sacrifice. It's not sensationalized or illustrated, but it is in the text (page 33). Obviously if you are reading aloud you'll catch this. If you are handing it to your child to read, you may want to be sure they won't be too disturbed by this.

 👁 **The Story of Clocks and Calendars** by Betsy Maestro, OR **The Calendar: Inventions That Shaped the World** by Patricia K. Kummer are recommended for older Primary kids who have the attention span, more informational in tone than SCC.

 **Made in China** by Suzanne Williams has excellent material if you are blending science in, AND/OR: 👁 **Science in the Past - Ancient China** - nice pictures, advanced text

 👁 **Pyramid and Unbuilding** by David Macaulay and/or **Kingfisher World of Pyramids** (all have great visuals) - Optional but nice.

 👁 **Science in the Past - Ancient Egypt**

 Optional Historical Context readers, more of a history focus than math/science.

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Story of the World Vol. 1 by Susan Wise Bauer

The 5,000 Year Old Puzzle, Solving a Mystery of Ancient Egypt by Claudia Logan

Seeker of Knowledge, The Man Who Deciphered Egyptian Hieroglyphs, by James Rumford, very nice picture book for older children in this level

The Egyptian News by Scott Steedman (fun tabloid-style "newspaper" book)



Culture and math picture books to choose from:

Moja Means One: A Swahili Counting Book, Muriel Feelings (Caldecott) and/or **Can You Count Ten Toes? Count to 10 in Ten Languages** by Lezlie Evans

Senefer, A Young Genius in Old Egypt, Beatrice Lumpkin - this is an excellent although advanced picture book that explores many mathematical ideas such as Egyptian multiplication. For older children in this level.

Not much math content, but fit the period and are very applicable for the theme:

The Spider Weaver, A Legend of Kente Cloth by Margaret Musgrove (very nice geometric illustrations)

The Village of Round and Square Houses, Ann Grifalconi, Caldecott Honor

A String of Beads, by Ashley Wolff



Three Pigs, One Wolf, and Seven Magic Shapes, A Hello Math Reader by Grace Maccarone. **Grandfather Tang's Story**, A Tale Told with Tangrams by Ann Tompert is another option, more advanced. Both create great opportunities for modeling activities with the stories - activity suggested for this one.

The Warlord's Beads by Virginia Walton Pilegard is a historical fiction picture book about the invention of the abacus. All the books in the Warlord series are set in China and are very good, but these are recommended for these lessons: **The Warlord's Puzzle** (tangrams); **The Warlord's Alarm** (water clock), **The Warlord's Messengers** (distance calculating)

Thirteen Moons on Turtle's Back, A Native American Year of Moons, Joseph Bruchac & Jonathan London, for the younger kids in this level.

Patterns in Peru, An Adventure in Patterning by Cindy Neuschwander - fun picture book set in Peru, style like Mummy Math

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Jack's Time Machine by Dan James, for older children in this level, fun book blending the Inca theme with time concepts.

Mummy Math, An Adventure in Geometry by Cindy Neuschwander

 **The Greedy Triangle** by Marilyn Burns, see activity in math section

aMaze Adventures: The Secrets of the Pyramids by National Geographic - great maze book based on Egyptian theme.

 Optional **MathFocus** reader used in this unit and future units: **Mr. Base Ten Invents Mathematics** by Bethany H. Tucker

 **MathFocus: Base Five, a Young Math Book** by David Adler. Simple introduction to number bases. Out of print, nice if you can find it.

Picture book Math Focus readers:

MathStart Readers by Stuart Murphy: **One . . . Two. . . Three . . . Sassafras!** (Level 1) and **Tally O'Malley** (Level 2).

Another very good reader on tallies is **The King's Commissioners** by Aileen Friedman, a Marilyn Burns Rainy Day Book

Advanced: **How to Count Like a Martian** by Glory St. John - Systems of counting including the Egyptian base ten, the Babylonian base sixty, the Hindu system using three symbols, and the abacus and computer systems. Out of print.

Advanced: **Counting Systems, The Familiar and the Unusual**, by Marnie Luce. Lots of practice with number bases in this one. Out of print.

 **Science in the Past, Ancient Mesopotamia** by Carol Moss. History of ancient science w/ chapters on mathematics. These are short books with lots of pictures.

 Optional Historical Context:

Ten Kings and the Worlds They Rule by Milton Meltzer

Machu Picchu by Elizabeth Mann, informational story of the Inca rise and fall with very nice illustrations, not too graphic, some discussion of the quipu included.

The Aztec News by Philip Steele (fun tabloid-style "newspaper" book)

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Picture Books: Five Chinese Brothers, Two of Everything, a Chinese Folktale by Lily Toy Hong (a favorite); Demi books



Parent Resources:

Dr. Wright's Kitchen Table Math Book 1 by Chris Wright, PhD, Art of Problem Solving.

Africa Counts, by Claudia Zaslavsky is a unique resource for understanding other cultures and math develop. Adult text, but quite readable, activities suggested.

Before Writing: From Counting to Cuneiform or **How Writing Came About** by Denise Schmandt-Besserat - adult text, contains many vivid, detailed pictures of artifacts such as tokens, or **How Writing Came About** by Denise Schmandt-Besserat if you cannot find the **Before Writing** book, it has gone out of print.


From Five Fingers to Infinity, a collection of math history essays edited by Frank Swetz

The Crest of the Peacock, George Gheverghese Joseph, excellent resource on non-European roots of mathematics, adult level.

Megaliths and Calendars, Discoveries Series by Abrams - Many photos in these small format books, adult text.

Multicultural Mathematics by Claudia Zaslavsky, includes activities, portions available online at Google Books

Native American Mathematics by Michael P. Closs - adult level

 **The Story of 1** (PBS Home Video/BBC) One hour video on the history of the number "1" presented with humor by Terry Jones. For all ages. Available at Blockbuster, Netflix and libraries, or online at YouTube or <http://video.google.com/>

Suggested for parents self-educating:

 **History of Science: Antiquity to 1700** (Teaching Company Series www.teach12.com)

 **Joy of Thinking Video Series** by The Teaching Company.

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Hands-on Math and Literature with MathStart by Don Balka has a number of additional hands-on activities for all readers listed in the math reading section.

Money Reading and Teaching Resources



The Go-Around Dollar by Barbara Johnston Adams and Joyce Audy Zarins - Nice picture book introduction to the features of the US dollar and how it's printed.



The Story of Money or **Smart About History - Money** These are more advanced readers on the history of money



MathFocus: Money Theme Readers

MathStart by Stuart Murphy: **The Penny Pot** (Counting Coins L.3); **Sluggers Car Wash** (Dollars and Cents L.3)

If You Made a Million by David M. Schwartz

Alexander Who Used to Be Rich Last Sunday (more for 1st and up)

A Dollar for Penny by Julie Glass, Level 2

Hello Math Readers Level 3: **Lemon & Ice & Everything Nice** by Catherine Weiskopf; **A Quarter from the Tooth Fairy** by Caren Holtzman; **The Lunch Line** by Karen Nagel; Level 4: **The Case of the Shrunken Allowance** by Joanne Rocklin and **How Much is That Guinea Pig in the Window?** by Joanne Rocklin

Mr. Monopoly's Amusement Park, A Math Adventure

Bunny Money by Rosemary Wells for younger children in this group

Money Theme Readers, less math focus

Once Upon A Dime, A Math Adventure by Nancy Kelly Allen

The Money Tree by Sarah Stewart / David Small

The Classic Tale of Ginger and Pickles by Beatrix Potter

Money Troubles by Bill Cosby

Monster Money Book, Loreen Leedy, younger book


Arthur's Funny Money by Lillian Hoban Level 2

Getting Down to Business, A First Guide to Earning, Saving and Spending Money, really nice introduction to the topic.


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Time Theme Readers and Teaching Resources

 **It's About Time!** Poems by Heide, Gilliland and Pierce. Easy read. **How Do You Know What Time It Is?** by Robert E. Wells is also outstanding and easy, more story cartoon and story like.

  **Advanced: About Time, A First Look at Time and Clocks**, by Bruce Koscielniak (second half will be used for Lesson 25)

 **MathFocus:** Any that you have access to for time, calendar and season themes:

MathStart by Stuart Murphy - **Get Up and Go!** (Timelines L. 2); **Rodeo Time** (Reading a Schedule, L. 3); **Pepper's Journal** A Kitten's First Year, (Calendaring L. 2); **Game Time!** (Time L.3)

Hello Math: Monster Math School Time by Grace Maccarone (L. 1); **Just a Minute!** By Teddy Slater, (L. 2), **What Time Is It?**

Pigs On A Blanket, Fun with Math & Time, Amy Axelrod - Story weaving in irregular time increments / time zones (my kids' favorite pig math); Similarly, try **Pigs on the Move, Fun with Math and Travel** - Time and time zones

 *Readers on Time, Calendar and Seasons Theme, Less Math Focused:*

All in a Day by Mitsumasa Anno and/or **Somewhere in the World Right Now** by Stacy Schuett - both are nice depictions of time zones and cultural differences between countries all over the world

Every Kid's Guide to Using Time Wisely by Joy Berry, wide age range appeal

 *Picture books for the youngest:*

The Completed Hickory Dickory Dock, by Jim Aylesworth,

It's About Time! by Dina Anastasio

Benjamin's 365 Birthdays by Judi Barrett, days of the year, young book

The April Rabbits by David Cleveland, days in a month, fun story, black and white

Frederick, Leo Leoni, classic picture book on seasons

Four Stories for Four Seasons, Tomie dePaola


Boom Chicka Rock, by J. Archambault, same author of Chicka Chicka Boom Boom

The Wonderful Tree, A Story of Seasons, beautiful book by Adelaide Holl

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Addition Math Teaching Resources

 **MathFocus** Addition: Any that you have access to for learning addition concepts.

For the youngest in this age group:

One More Bunny, Adding from One to Ten by Rick Walton - Excellent reader, this book shows the different ways you combine addition facts in a simple way

The Mission of Addition by Brian Cleary

MathStart by Stuart Murphy: **Animals on Board** (Adding L.2)

How Many Feet? How Many Tails? Math Riddles by Marilyn Burns

Five Silly Fisherman by Robert Edwards

12 Ways to Get 11 by Eve Merriam

Greg Tang's **Math Fables**

Domino Addition by Lynette Long

More complex addition presentation:

Mission Addition by Loreen Leedy


Each Orange Had 8 Slices by Paul Giganti (adding / skip counting book)


Sea Sums by Joy N. Hulme


The Hershey's Kisses Addition Book by Jerry Pallotta

Greg Tang's **Math For All Seasons, Math-Terpieces**,

(Any addition book can be used for subtraction by following the opposite operation.)

 **Dr. Wright's Kitchen Table Math Book 1** by Chris Wright, PhD, Art of Problem Solving. Chapter 2 covers easy addition and subtraction, Chapter 3 covers more advanced addition concepts.

 **Additional enrichment reading: Twelve Snails to One Lizard: A Tale of Mischief and Measurement and How Tall, How Short, How Faraway** by David Adler

 **What's Your Angle, Pythagoras?** by Julie Ellis - Picture book version of a young Pythagoras' adventures, format for re-enacting math discoveries.

Also, **Pythagoras and the Ratios** by Julie Ellis - Picture book version of a young Pythagoras' adventures, format for re-enacting math discoveries.

  **Science in the Past - Ancient Egypt and Ancient Greece** - advanced

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MathFocus Picture book readers:

Sea Squares - Visual square numbers book with a marine animal theme. **Bats on Parade** by Kathi Appelt, is an alternate.

Domino Addition by Lynette Long, very nice book illustrating how we see and manipulate numbers in figurate arrays.

MathStart by Stuart Murphy - **Seaweed Soup** (Matching Sets L.1), **Missing Mittens** (Odd and Even Number, L.1) Both of these are more versatile L. 1 readers; **A Pair of Socks** (Matching, L. 1), for the youngest in this level

What Comes in 2s, 3s and 4s? By Suzanne Aker, for younger children

What's a Pair? What's a Dozen? Stephen Swinburne, for younger children



Underwater Counting by Jerry Pallotta and **Sea Squares** by Joy Hulme.

Underwater Counting is a highly visual representation of even numbers, and there is a companion book of odd numbers.



Optional Historical Context:

Alexander the Great, the Kids Who Ruled Series/Peter Bendrick Books

History Detectives: Ancient Egypt by Philip Ardagh



Additional enrichment reading - These include activities for number sets:

Even Steven and Odd Todd, Hello Math

Underwater Counting (Even Numbers) by Jerry Pallotta - a gorgeous picture book!

That's Good, That's Bad - Joan M. Lexau / Aliki and/or **Fortunately** by Remy Charlip - contrasting patterns similar to odd and even



Mr. Archimedes' Bath by Pamela Allen - Fun and short picture book version of Archimedes famed "Eureka" moment with the help of some animal friends. A companion book to this is **Who Sank the Boat?** by the same author.




More advanced biographical sources :

Archimedes and the Door of Science, Jeanne Bendick. Fictionalized biography based on known details of Archimedes' life, family read aloud or read-alone 8+

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Archimedes, Pioneers of Science, Peter Lafferty – Good history information, lots of pictures, but out of print

 **How Do You Lift A Lion?** Robert E. Wells, simple machines picture book, science and math

  National Geographic's **Milestones of Science** – for pictures (upper level text)

 Jim Weiss audio book, **Galileo and the Stargazers**, is excellent for this lesson.

Subtraction Math Teaching Resources

 **MathFocus** Any that you have access to for learning addition concepts:

For the youngest in this age group:

One Carton of Oops! By Judy Bradbury

The Mission of Subtraction by Brian Cleary

MathStart by Stuart Murphy: **Elevator Magic** (Subtraction L.2)

Ten Sly Piranhas by Victoria Chess

The Great Take-Away by Louise Mathews – fun story line with lots of math

The Family Minus – This is a series, some have more math than others

More complex addition presentation:

Mission Addition by Loreen Leedy



MathStart by Stuart Murphy, **Shark Swimathon** (Subtracting 2-digit numbers)

88 Pounds of Tomatoes, Hello Math Reader L.4 by Cindy Neuschwander

The Hershey's Kisses Subtraction Book by Jerry Pallotta

Next Stop Grand Central, Maira Kalman

Puzzle books, such as the Usborne **Adding and Subtracting Puzzles**, are enjoyed by my children once they have mastered the basics of operations

  Picture books, many with activities:

Why I Will Never Ever Ever Ever Have Enough Time to Read This Book / Arm in Arm – both of these Remy Charlip books have themes dealing with infinite series and appeal to wide age ranges, even adults, they are fun!

Seven Blind Mice – Classic tale about perspective.

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MathStart Series by Stuart Murphy: **Captain Invincible and the Space Shapes** - Geometric planes and solids. **Hamster Champs** for angles and trajectory.

Who Took the Farmer's Hat? Perspective / looking at familiar items differently.

The Silly Story of Goldie Locks and the Three Squares, Hello Math

Tic Tac Toe, Three in a Row - Hello Math, series, patterns, logic.

The Wing on a Flea, Ed Emberly - shapes in objects



The Librarian Who Measured the Earth, Kathryn Lasky



MathFocus: Readers:

Millions of Cats by Wanda Gag - classic on place value order of large numbers, highly recommended.

How Much is a Million by David M. Schwartz, easiest to read

Big Numbers by Edward Packard - Excellent for this lesson, visuals of powers of 10 using peas, comic style, the companion book, **Little Numbers** is also recommended

Is a Blue Whale the Biggest Thing There Is? Robert E. Wells, Well done science / math book on large numbers and scale, the companion book, **What's Smaller Than a Pygmy Shrew** is also recommended