Living Math!

BOOK LIST FOR LIVING MATH LESSON PLANS

Cycle 1, Unit 1 (C1U1) Intermediate 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. <u>It is not necessary to purchase all of these</u>. 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	👁 Highly visual resource, pictures
📖 Book resource in print and/or online	📺 Video resource
📄 Contains printable handout(s)	✋ 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.   📖 **Marvels of Math** by Kendall Haven has stories that apply to both Cycle 1 and 2.

📖 **Math history readers** used across multiple units – 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, story written in 1919 in a story-telling style. This book is available at Google Books online http://books.google.com/books or a print copy can be purchased.

   The Secret Life of Math 👁   by Ann McCallum, lots of activities included.

   Why Pi? 👁 How Math Applies to Everyday Life by Johnny Ball.

   Think of a Number 👁 A fascinating look at the world of numbers, Johnny Ball.

The Wonderful World of Mathematics by Lancelot Hogben. This is a classic you'll see listed on many math reading lists, older style of writing. Some pictures.

Mathematics: The World of Science 👁 by Irene Fekete, also older style, more visual than Hogben's book.

More advanced math readers:

Pantheon Story of Mathematics For Young People by James T. Rogers

The Story of Science, Volume 1 by Joy Hakim

📖 **Challenge Math** for the Elementary and Middle School Student by Ed Zaccaro is an optional **MathFocus** resource suggested chapters in all units.

📖📄✋ Math Activity books suggested in Unit 1, and used in future units, see Parent Letter for information on what to choose:

The Secret Life of Math, by Ann McCallum – for younger kids in this level

Historical Connections In Mathematics by Wilbert and Luetta Reimer: Volume 1 - Pythagoras and Archimedes; Volume 2 – Thales, Volume 3 – Eratosthenes

Mathematics by Irving Adler

Algebra Activities from Many Cultures by Beatrice Lumpkin, there are activities ranging from easy enough for Primary kids to high school level. Most apply to Unit 1, some to Unit 2. Most of these activities are available free online at http://books.google.com/books

Multicultural Mathematics by Claudia Zaslavsky, very good for Intermediate, many of these activities are available free online at http://books.google.com/books

📖 Optional Historical Context:

The Story of the World by Susan Wise Bauer is suggested as optional historical context. Volume 1 is scheduled in this unit.

Ten Kings and the Worlds They Rule by Milton Meltzer

<u>Younger Intermediate Kids</u>: Picture books from the Primary lessons often appeal to younger Intermediate kids and have the benefit of review of easier concepts. Families are encouraged to add these into Intermediate lessons as desired.
http://www.livingmath.net/C1PrintableBooklists/tabid/1046/Default.aspx

Living Math Through History
C1U1 Intermediate Level Book List

Lecture series from The Teaching Company suggested for parents self-educating:

▼·· **History of Science: Antiquity to 1700**

▼·· **The Joy of Thinking** *The Beauty and Power of Classical Mathematical Ideas* – some of these lectures are accessible to Intermediate level kids.

📖 *Math History Readers*, used only in this unit. Each is different in style of presentation:

  The History of Counting by Denise Schmandt-Besserat.

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

📖 **Senefer, A Young Genius in Old Egypt,** Beatrice Lumpkin – although this is in a picture book format, it is an advanced reader and explores more advanced mathematical ideas such as Egyptian multiplication.

📖 **How to Count Like a Martian** by Glory St. John - Different 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.

👁 **Science in the Past, Ancient Mesopotamia** – history of ancient science w/ chapters on mathematics. Series consist of fairly short books with lots of pictures.

📖 **String, Straightedge & Shadow** by Julia Diggins, approx. 7th grade on up.

📖 Optional Historical Context - **Story of the World Vol. 1** by Susan Wise Bauer.

📖 *Parent Resources*:

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

  👁 *Parent Resource*: **Before Writing: From Counting to Cuneiform** by Denise Schmandt-Besserat – adult text, contains many vivid, detailed pictures of artifacts such as tokens.

  From Five Fingers to Infinity, a collection of math history essays edited by Frank Swetz (Chapter 7) or **How Writing Came About** by Denise Schmandt-Besserat are more abbreviated sources of token images if you cannot find the **Before Writing** book, it has gone out of print.

Living Math Through History
C1U1 Intermediate Level Book List

⏯ **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 some libraries, or can be viewed online (not as good quality) at YouTube or http://video.google.com/

📖 **The Story of Money** or **Smart About History – Money** - These are whole book readers.

📖 **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 in particular as containing mathematical ideas: **The Warlord's Puzzle** (tangrams); The Warlord's Alarm (water clock), **The Warlord's Messengers** (distance calculating), and **The Warlord's Puppeteers** (ratios).

📖 **Made in China by Suzanne Williams** has nice material if you are blending science in. ALSO: 📖 👁 **Science in the Past** – Ancient China for younger readers

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

⏯ **Video:** The PBS video, *The Ascent of Money* is a very good introduction to how money came about and how it works in the world today.
http://www.pbs.org/wnet/ascentofmoney/

📖✋👁 **Secrets in Stone: All About Maya Hieroglyphs** Check the last page for hieroglyphics stencil master and codes. * Note re Secrets in Stone: 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: Marking a Millennium**, by Betsy Maestro

Living Math Through History
C1U1 Intermediate Level Book List

   📖   Upper Elem/Middle School Level Readers on Time theme:

     This Book is About Time, Marilyn Burns – Time history and what makes time

     The Terrible Truth About Time (Horrible Science) by Nick Arnold, time history

     The Thirteen Clocks by James Thurber, Fun story

   📖 Optional Historical Context: **The Aztec News** by Philip Steele (fun tabloid-style "newspaper" book)

   📖👁 **Megaliths and Calendars, Discoveries Series by Abrams** – Wonderful pictures in these books, adult text.

   📖✋ *Parent Resources*: **Multicultural Mathematics** by Claudia Zaslavsky includes activities; **Native American Mathematics** by Michael P. Closs – adult level

   📖 **Additional Enrichment Easy Reading**:

OUT OF PRINT, OUTSTANDING IF YOU CAN FIND THEM:

Base Five, by David A. Adler, a Young Math

This is 4: The Idea of A Number, Arthur G. Razell

Number Ideas Through Pictures, Mannis Charosh (Young Math Book)

Solomon Grundy, Born on Oneday: A Finite Arithmetic Puzzle by Malcolm E. Weiss

IN PRINT:

How Do You Know What Time It Is? Robert E. Wells (outstanding picture book)

Boom Chicka Rock, by John Archambault, Suzanne Tanner Chitwood

It's About Time! Dina Anastasio

Hello Math: **What Time Is it?, Just a Minute!** and **Monster Math School Time**

Pigs On A Blanket, Fun with Math & Time, Amy Axelrod – Very good picture book weaving in time in irregular increments as well as time zones (my kids' favorite pig math)

All in a Day by Mitsumasa Anno – wonderful depiction of time differences between countries all over the world

Somewhere in the World Right Now by Stacy Schuett (time zones)

Greg Tang's books complimentary with groupings.

Living Math Through History
C1U1 Intermediate Level Book List

📖 **Counting Systems: The Familiar and the Unusual** by Marnie Luce, out of print but excellent if you can find it.

📖 **Millions to Measure** by David Schwartz

📖👁 **Pyramid** and **Unbuilding** by David Macaulay and/or **Kingfisher World of Pyramids** (all are excellent)

📖👁 **Science in the Past – Ancient Egypt.** Very good for Egyptian Mathematics

📖 Optional Historical Context:

   The 5,000 Year Old Puzzle, Solving a Mystery of Ancient Egypt by Claudia Logan and Melissa Sweet and/or

   Seeker of Knowledge, The Man Who Deciphered Egyptian Hieroglyphs, by James Rumford – picture books for younger kids in this level.

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

📼 Nice five-minute video on **measurement history**:
http://www.youtube.com/watch?v=DQPQ_q59xyw&feature=related

📖 **Additional enrichment reading** if you have time and interest
   Twelve Snails to One Lizard: A Tale of Mischief and Measurement
   How Tall, How Short, How Faraway by David Adler
   The Greedy Triangle, Marilyn Burns
   Inchworm and a Half, Elinor Pinczes

📖 **What's Your Angle, Pythagoras?** by Julie Ellis – For younger kids in this level, picture book version of a young Pythagoras' adventures, nice for re-enacting math discoveries.

📖👁 **Science in the Past – Ancient Greece**

📖 Optional Historical Context

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

   History Detectives: Ancient Egypt by Philip Ardagh

Living Math Through History
C1U1 Intermediate Level Book List

📖 **Additional enrichment reading**

Sea Squares – Square Numbers in pictures

Number Ideas Through Pictures, Mannis Charosh - Excellent if you can find it

Hello Math **Even Steven and Odd Todd,** MathStart Reader **Missing Mittens,**

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

Shape Up! David Adler – Fun with Triangles and Other Polygons

That's Good, That's Bad – Joan M. Lexau / Aliki and/or

Fortunately by Remy Charlip – contrasting patterns similar to odd and even

---

📖 Choose one or more biographical sources (highly recommended)

Archimedes and the Door of Science, Jeanne Bendick. Fictionalized biography based on known details of Archimedes' life, ideal for ages 8 – 12 or family read aloud.

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

📖👁 National Geographic's **Milestones of Science** – optional, great photos/illustrations

---

📖✋ *Picture books for younger kids in this level, many with activities.*

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

Seven Blind Mice – Classic tale about perspective.

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

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

Math Man by Teri Daniels – Fall season, relevance of math in grocery business

---

📖 **The Librarian Who Measured the Earth** by Kathryn Lasky

📖✋ **Famous Problems and Their Mathematicians** by Art Johnson

📖🖱 Original text of **The Sand Reckoner** by Archimedes, older kids, translated
http://web.fccj.org/~ethall/archmede/sandreck.htm

The Greek News by James Putman (fun tabloid-style "newspaper" book)

📖 *Additional enrichment reading*: There is a lot of math in the following picture books dealing with large numbers and exponential growth.

The best I have found for kids that deals with relative big and smallness are the Robert Wells books, **Is a Blue Whale the Biggest Thing Ever?** and **What's Smaller Than a Pygmy Shrew**

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

Millions of Cats by Wanda Gag

If You Hopped Like a Frog, David Schwartz is excellent

On Beyond A Million Schwartz, David