



Women Who Lead – MathQuest Event

Math Resources

- Developed by Nancy Blachman and Maria del Rosario Zavala

Websites & Activities

- familymath.stanford.edu/community - A curated list provided by DREME on what families can do to infuse math into everyday activity. A variety of websites and resources are listed on this page
- www.pbs.org/parents/learn-grow/all-ages/math - A great website with activities, suggested videos, and other ideas for children
- www.earlyfamilymath.org/activities This website draws on many of the ideas we discussed to give parents and caregivers lots of activities and ideas for things to do with children. And the activities are translated into multiple languages!!!
- jrmf.org - A collection of activities to have a low floor so that anyone can find a way to engage and a high ceiling so that everyone can find a meaningful challenge. All of the puzzles come with free festival guides that help you use our activities at home, in the classroom, or during math festivals.
- mathforlove.com - We are Dan Finkel and Katherine Cook, a husband and wife team devoted to transforming how math is taught and learned. We develop math games and curriculum, including tons of free lesson plans that we give away here. We train teachers and produce professional learning materials. And we write puzzles, produce math-art shows, and do whatever we can to show people how playful, beautiful, and life-changing mathematics can be.
- NRich.maths.org - NRich focuses on problem solving and on creating opportunities for students to learn mathematics through exploration and discussion. NRich provides thousands of free online mathematics resources for ages 3 to 18, covering all stages of early years, primary and secondary school education - completely free and available to all.
- MathPickle.com - A free online resource of original mathematical puzzles, games and unsolved problems for K-12 teachers. MathPickle.com is a practical resource for teachers and parents. Its visually compelling puzzles and games engage students in tough problem solving. Its puzzles are organized by grade and subject – each designed for a 45-60 minute period. All have low-floor, high-ceiling. They engage struggling students in curricular skill acquisition, and deflect top students into tenacity-building challenges.
- [Possible STEM Selves](#) – this google doc is curated by Maria (mdrzavala@gmail.com) and has a variety of resources to help humanize mathematicians and introduce Black, Indigenous, and Latinx mathematicians too .
- [Talking Race and Math with Children’s Books](#) - this is an entry from Maria’s blog, on how children’s books, especially those that talk about social issues or important events in history, can be great to read aloud and mathematize along the way. Originally written in the summer of 2020, the ideas still apply.

Videos

- [The Dot and the Line](https://www.youtube.com/watch?v=D_QhIVYlcmE) - www.youtube.com/watch?v=D_QhIVYlcmE - Chuck Jones' playful and sweet Romance in Lower Mathematics.
- www.youtube.com/user/numberphile - Videos about numbers and mathematics. Videos by Brady Haran since 2011.
- www.youtube.com/@Vihart - creating Music, Mathematics, and Media to Lift the Human Spirit.
- [www.youtube.com/watch?v= WILfJhh8c](https://www.youtube.com/watch?v=WILfJhh8c) - Julia Robinson Mathematics Festival ([JRMForg](https://www.youtube.com/watch?v=WILfJhh8c)) video made for Julia Robinson's 100th birthday. JRMF has been inspiring young learners since 2007.

Books

- [Cultivating Mathematical Hearts](#) by Maria Zavala & Julia Aguirre. Though written with teachers in mind, parents may like to familiarize themselves with the framework for culturally responsive mathematics teaching, as it overlaps with many ideas we discussed tonight
- [Mathematician's Lament: How School Cheats Us Out of Our Most Fascinating and Imaginative Art Form](#) by Paul Lockhart (for parents)
- [The Amazing Mathematical Amusing Arcade](#) by Brian Bolt and [other books by Brian Bolt](#)
- [The Big Book of Brain Games](#) by Ivan Moscovich and [other puzzle books by Ivan Moscovich](#)
- [Getting Smarter Every Day](#) by Dale Seymour - 5 books in the series for Grades 3 - 9
- [aha! Insight](#) by Martin Gardner and other books by Martin Gardner
- [This is Not a Maths Book](#) by Anna Weltman – a fun activity book that's all about art, but happens to also be about math
- There are many other books with engaging mathematical games and puzzles.

Apps

- [JRMF App Puzzles](#) - Every JRMF puzzle is hands-on, play-based, and standards-aligned. We design our activities to have a low floor so that anyone can find a way to engage and a high ceiling so that everyone can find a meaningful challenge. All of our puzzles come with free festival guides that help you use our activities at home, in the classroom, or during math festivals.
 - [Skyscrapers](#) (logic puzzle)
 - [Catch Up](#) (number puzzle)
 - [Dueling Dice](#) (number puzzle)
 - [Magic Flowers](#) (number puzzle)
 - [Stepping Stones](#) (number puzzle)
 - [Gerrymandering](#) (shape puzzle)

Community Resources

- mathcircles.org - **Math Circles** are communities focused on the enjoyment of mathematical problem solving. Meetings are lively, interactive, and often “funstrating”: challenging, but in a highly rewarding way! Math Circles can take many forms, including after-school programs for students, professional learning communities for teachers and mathematicians, or groups of parents or families who want to become more involved with mathematics education. There are nearly 300 Math Circles around the U.S., including approximately 150 Math Teacher Circles and another 150 Math Student Circles. Check out our [map](#) to see if there's one near you, or start your own!

Recommended Games

Games that depend on Geometry or Position:

- [The Genius Square](#) - Promotes problem solving and motor manipulation skill training. Roll the seven dice together and place a blocker in each of the coordinates that appear on the faces. Now fill every other space on the grid! (\$30) For ages 6+

- [Rock Me Archimedes](#) - Players incorporate and move their pieces around a moving board that they must keep in balance, while looking for a winning move. (\$20) Ages 8+
- [Blokus Board Game](#) - Players take turns placing their 21 pieces on the board: each piece must touch another of the same color, but only at the corners! (\$20) For ages 7+
- [Color Fold](#) - Finding the right combination of overfolds and underfolds will challenge even the most skilled puzzlers. Strengthen your visual perception and sequential reasoning skills as you fold and flip your way through 40 beginner to expert challenges! (\$11) Ages 8+
- [ThinkFun games](#) - ThinkFun is dedicated to creating games that foster learning through play and helping families like yours create fun moments that last a lifetime.

Numerical Games:

- [Krypto Card Game](#) - Krypto has come out with this 56 card deck card game which is a fun game that also helps to bone up math skills. (\$15) Ages 12+
- [Prime Climb](#) - Beautiful, colorful, math strategy game. (\$25) Ages 10+
- [24 Game - Single Digits](#), [24 Game - Double Digits](#) - This game provides fabulous math facts practice! It's so simple: just make the number 24 from the four numbers on the card. You can add or subtract or multiply or divide using all four numbers on the card—but use each number only once! Set contains 3 challenge levels, 48 cards. Builds strong mental math power! (\$13) Ages 6-12

Other Recommendations - For Middle and High School Students

- [SAfG's STEM Scholar Club](#) - Resources, Internships, Scholarships, STEM community events and more. Sign up for our bimonthly newsletter to get all the latest news and information!
- [youtube.com/c/3blue1brown](https://www.youtube.com/c/3blue1brown) - By Grant Sanderson - Some combination of math and entertainment, depending on your disposition. The goal is for explanations to be driven by animations and for difficult problems to be made simple with changes in perspective.
- [Computer Science Unplugged](#) - A collection of free teaching material that teaches Computer Science through engaging games and puzzles that use cards, string, crayons and lots of running around.
- [theguardian.com/science/series/alex-bellos-monday-puzzle](https://www.theguardian.com/science/series/alex-bellos-monday-puzzle) - Can you solve it? Alex Bellos has been setting a puzzle here every two weeks since 2015
- projecteuler.net - A series of challenging mathematical/computer programming problems that will require more than just mathematical insights to solve. Although mathematics will help you arrive at elegant and efficient methods, the use of a computer and programming skills will be required to solve most problems.
- [exp11.com](https://www.exp11.com) - If you're currently learning any math subject from Pre-Algebra through high school Geometry, but find it easy (or even boring), we'll guide you to love thinking hard until you crack difficult problems. You'll learn the joy of inventing your own ideas. This new power will make it easy for you to learn anything in the future.

Email any additional suggestions for resources to: nancy.blachman@gmail.com.

For more STEM activities you can do, as a family or individually:

Check out Scientific Adventures for Girls' [YouTube Channel](#), our [Science At Home activities](#) and sign up for our [Monthly Parent Newsletter](#).