

Family Math Night

Want to run a family math night at your school or library? You've come to the right place!

This document gives you material and links suitable for K - 5. There's also stuff that's great for preK and older kids.

I've also prerecorded a video you can show to parents about how they can support math at home. My slides from this talk are also available, if you'd like to use them to give your own version.

Recommended Setup

If everyone is present at the beginning, I recommend starting with a welcome, showing a brief video or giving a brief talk about supporting math at home through games and play, and then transitioning to letting families try out the activities for themselves. Set up tables throughout the room and let people go to the ones they're most interested in, try them for a while, and move along to others.

If people are trickling in and it's not convenient to start with everyone together, then welcome people as they come in and help them get oriented. Then they can rotate between table activities. At some point, you can gather everyone together to give a brief talk or show a brief video and take questions.

Recommended Materials

- Dice (for Pig, Don't Break the Bank, Blockout, Odd Pig Out)
- Cards (especially Tiny Polka Dot cards, if possible - mathforlove.com/dot)
- Printouts (for hexagon challenge, beat the tax collector, Broken Calculator, Diffy Squares)
- Pattern Blocks (optional, but especially Upscale and 21st Century if possible - see mathforlove.com/century or mathforlove.com/upscale)
- Scratch paper, pencils, crayons and/or colored pencils, tokens or counters

Recommended giveaway packet

If possible, I recommend giving families some things to take home:

- Our Math Game Short List handout (see below - print 2-sided if possible)
- Dice
- Cards (if possible). Standard decks are fine - Tiny Polka Dot is a great option. You can print decks from the file here: mathforlove.com/2020/05/free-printable-tiny-polka-dot-starter-deck
Contact info@mathforlove.com about bulk education discounts on Tiny Polka Dot cards.
- A collection of games for K - 2 or 3 - 5.

The Activities

Activity	Materials	Recommended Grade	Video Links
1-2 Nim	<ul style="list-style-type: none"> • Instructions Handout • Counters or beans or other tokens 	K - 5 (preK okay too)	https://mathforlove.com/video/rich-task-1-2-nim-lesson-plan-with-dan-finkel/
Dots and Boxes & Box the Numbers	<ul style="list-style-type: none"> • Handout • Pencils or crayons 	K - 5	
Match the Dots / Dot 5 Memory / Sum-Memory	<ul style="list-style-type: none"> • Tiny Polka Dot cards or other cards 	K - 3 (preK options available)	https://mathforlove.com/games/tiny-polka-dot/learn-to-play/
Hexagon Challenge	<ul style="list-style-type: none"> • Handout • Upscale/21st Century/classic Pattern Blocks 	K - 5 (free play for younger/older kids okay too)	https://mathforlove.com/lesson/pattern-block-fill-ins/
Polka Loop Puzzle	<ul style="list-style-type: none"> • Tiny Polka Dot cards or other cards 	K - 5	https://mathforlove.com/games/tiny-polka-dot/learn-to-play/
Pig Odd Pig Out	<ul style="list-style-type: none"> • Dice • Score sheet and pencils 	1 - 5 3 - 5 for Odd Pig Out (Okay for older grades too)	https://youtu.be/ZoLhdWzOcG4?t=716 (this is a solo/collaborative version) https://youtu.be/Gl1QgvY6ufU?t=753 (Odd Pig Out)
Don't Break the Bank	<ul style="list-style-type: none"> • Dice • Score sheet and pencils 	3 - 5 (Okay for older grades too)	
Blockout	<ul style="list-style-type: none"> • Dice • Score sheet and colored pencils or crayons 	3 - 5 (Okay for older grades too)	
Broken Calculator	<ul style="list-style-type: none"> • Handout • Pencils & scratch paper 	3 - 5 (Okay for older grades too)	
Diffy Squares	<ul style="list-style-type: none"> • Handout • Pencils & scratch paper 	3 - 5 (Okay for older grades too)	https://mathforlove.com/2020/03/diffy-squares/
1, 3, 4, 6 puzzle	<ul style="list-style-type: none"> • Handout • Pencils & scratch paper 	3 - 5 (Okay for older grades too)	

Math Games Short List

“What books are to reading, play is to mathematics.”

-Dan Finkel, mathforlove.com

We all want to support kids in developing their math skills, but how can we actually do it?

A play-based approach is our best friend.

Inviting kids to play games means quality family time, building math skills without stress.

Supporting your kids through math games

- **Let kids do the work!**

The more kids do, the more they learn. Avoid explaining how to solve a puzzle or what the right move in a game is. Only give hints if they'll keep kids engaged longer. Giving away the answer ruins the game.

- **Play Along!**

Show your kids that you're having as much fun as they are! They'll follow your lead. Show them how play and math go together.

- **Have fun first!**

The most important lesson we can teach kids about math is that it's fun and empowering. If you or your kids are not having fun, take a break.

A lot of games involve mathematical thinking, and are worth playing.

The classics include a lot of great games for math: Chess, Go, Backgammon, Checkers, Chinese Checkers, Yahtzee, Pente, Connect 4, Sorry, Othello, poker, Mastermind, and so on.

These games are all fantastic for encouraging math thinking. They're also quite well known.

For some you may not have heard of, see the other side of this page.

GAMES FOR FREE

Pencil and paper games

- [1-2 Nim](#)— A perfect first game for kids. You can play with any object, or even your fingers. See mathforlove.com/lesson/1-2-nim for rules.
- [Dots and Boxes](#) — Kids of all ages can play this game endlessly. There's beautiful strategy, basic counting and geometry for young kids, and exposure to arrays and multiplication. [Box the Numbers](#) is an excellent extension.
mathforlove.com/lesson/dots-and-boxes-game
mathforlove.com/lesson/box-the-numbers

Card games

- [Sum-Memory](#). Just like classic Concentration, except you keep a pair of cards if they add to 10. This one is great with [Tiny Polka Dot](#) cards. Lots of other simple card games with video instructions can be found at the “Learn to Play” tab at mathforlove.com/dot.

Dice Games

- [Pig](#) is an absolute classic. Check out Big Pig or Odd Pig Out for older kids.
mathforlove.com/lesson/pig
- [Blockout](#) is a wonderful game, perfect for practicing multiplication.
mathforlove.com/lesson/blockout

GAMES FOR PURCHASE

Board Games

- [Prime Climb](#) – The board is color-coded to give a completely different insight into how multiplication and division work, and it supports a much deeper understanding and flexibility of arithmetic. See mathforlove.com/prime for more info.
- [Multi](#) - This delightful take on Tic-Tac-Toe is great for practicing multiplication.
- [Kingdomino](#) and its variations are wonderful.

Puzzle Games

ThinkFun (thinkfun.com) stands out as the top puzzle game publisher. Their entire portfolio is excellent, but I especially recommend [Rush Hour](#), [Chocolate Fix](#), and [Laser Maze](#).

BOOKS AND WEBSITES

- earlyfamilymath.org has a ton of free resources, including games and storybooks.
- Kent Haines' gamesforyoungminds.com is ideal for finding the math game for your child.
- Denise Gaskins has excellent resources for free and for sale at denisegaskins.com.
- Want a deeper dive? Check out Ben Orlin's fabulous *Math Games with Bad Drawings*.