Mini MATH Fair!

You're invited to participate in our Math Fair! This is a chance for you to share how much fun math can be with others around you. Your job is to help shift their perception of math from being scary or frustrating to exciting and interesting by giving them experiences that are outside of a textbook or classroom setting.

Most of us know at least one person who doesn't like math, and usually it's because they didn't have a positive experience with it when they were younger. We're going to change that with our Math Fair by creating fun, happy, and engaging experiences for people to explore and discover in, and I need your help!

Students will demonstrate a math concept or topic they are really interested in by creating an activity, project, game or doing a demonstration or performance (like a magic show but with math). We want visitors of our Math Fair to experience math as they never have before, and this will be for everyone of all ages to enjoy, no matter what kind of education they have.

<u>Here's how to participate:</u>

1. Select a topic or math concept you are interested in. This can be any area of math that you want. I've posted ideas on the following page. You don't have to pick from this list, this list is only to get you started thinking about topics.

2. Come up with *one thing* you want your visitors to walk away with. This could be how to add fractions, or discovering how often a 6 shows up on dice, or how to decode a secret cipher message. Keep it simple, we don't want to overwhelm people. This *one thing* is what you'll be creating your activity around.

3. Design your math activity with these three things in mind:
    a. Totally Fun!
    b. Engaging and catches their attention
    c. Easy for newcomers to participate

Your activity can be a demonstration that you for people to watch; a game you invent to play; a secret code you came up with; a small project you built yourself; an activity that others work on together to find a solution… or whatever you need it to be to get them to understand the *one thing* you want them to understand and experience.

Once you've done these three things, it's time to put it into action. You need to show us what you've done, and here are several options for doing this:

- Take a video of you demonstrating your idea or sharing it with others. This can be you explaining your idea to the camera, or you in action actually teaching others about your project.
- Write a page about your project, what you came up with and how you shared it with others, and what their experience was like.
- Design a display board (like for a science fair) and add text, pictures, and hands-on objects participants can interact with

Remember, your project only needs to teach ONE THING to your audience.

Let's get started! Brainstorm a couple of ideas that you want to do. That way, if you start in on one idea and it doesn't work out (not all math concepts are easy to demonstrate, for example), you have a couple of other options.

Ideas for Math Fair Topics This is just a quick list to get you started thinking about what you want to do. Feel free to use anything that YOU are interested in, even from our math classes. or anything you want!

- Rubik's Cube
- Abacus
- Math & Music
- Tools & Measurement
- Money Math
- Magic Squares
- Optical Illusions
- Finger Math
- Pascal's Triangle
- Pi π
- Mobius Strip
- Fractions
- Binary counting
- Infinity
- Codes & Ciphers
- Famous Mathematicians
- Squares & Square Roots
- Fibonacci Numbers
- Mastermind
- Probability with Dice
- Prime Numbers
- Polygons
- Golden Ratio
- Four Color Map Problem
- Astronomy & Mathematics
- Zeno's Paradox
- Business Math
- Fractal Geometry
- Cryptarithms
- Math Mysteries
- Kepler's Laws of Planetary Motion

Here are samples from a Math Fair by Amy Mills, a 6th – 8th grade teacher in Philadelphia.

Fishing for Facts game with paperclips on paper fish and a magnet fishing pole

Fraction Pizza was always a popular game… paper pizza with real pizza boxes!

Bean bag Math Toss showed how to figure out the fraction, decimal and percent of the shots they made using cardboard and bean bags!

Learn how to figure out how fast you are running with this cool demo on a Display Board

Math Twister with Dice: write numbers or problems on an old Twister mat and add a couple of dice!

Math Twister – write equivalent fractions or math problems on an old Twister mat and spinner!

Math Jenga Towers with multiplication table problems on each stick!

Triangular Numbers with stacking cups. This game shown here was *Build a 100 Cup Structure*.

The Guesstimate

Fill a jar with candy and show people how to make better guesses!

Math Origami using paper to make beautiful geometric shapes!