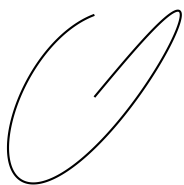
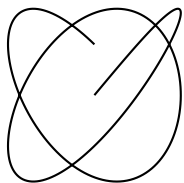


Summer 2010 Math and Technology Academy



Would you like to become a technology whiz? Would you like to study for an upcoming class or tackle an independent math project? The Academy is a free program for children or adults. We meet at the Notre Dame community building in downtown South Bend at 217 South Michigan Street.



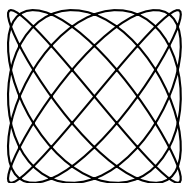
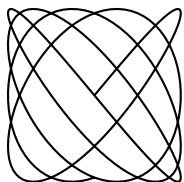
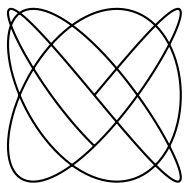
Our sessions are open *Mondays through Thursdays* during the last three weeks of July (*July 12 through July 29*), from 6 to 8 PM each evening.

On Thursday, July 29th we will hold our Summer Math and Technology Fair so that students can share their accomplishments with their families. Students may bring a snack to share.

If you have questions, contact:

Amanda Serenevy
amanda@riverbendmath.org
(574) 339-9111 (cell)

Riverbend Community Math Center
1021 Queensboro
Mishawaka, IN 46544



Math and Technology Academy Registration Form

Name of Student: _____

Grade and/or age: _____

Phone number: _____

School: _____

Address: _____

Email: _____

We sometimes take photos during events to use in promotional materials or on the web page. We never release personal information or last names of students, but we sometimes use first names.

The Math Center MAY use photos of this student

The Math Center MAY NOT use photos of this student

This student has permission to attend math events sponsored by the Riverbend Community Math Center.

Parent or Guardian signature (if student is under 18): _____

Parent or Guardian printed name (if student is under 18): _____

A few project ideas

- Turtle Logo. Create geometric designs while learning a simple computer programming language.
 - Lego Mindstorms Robots. Learn to build and program lego robots to complete various challenges.
 - Binary Calculator. Learn to use digital logic gates to create a calculator that adds binary numbers.
 - Voting Theory. Learn about different methods of deciding who should win an election. When do different methods produce different results? Which methods are the most fair?
 - Fractals. Learn what a fractal is and how to write a computer program that can create colorful fractal designs. Use a spreadsheet to analyze your fractals numerically.
 - Rubik's Cube. Learn to solve a Rubik's Cube and other similar puzzles. Learn about the mathematics behind Rubik's Cubes.
 - Lissajous Figures. Learn how to build a sand pendulum that makes intricate designs. What equations can you use to describe the motion? How do the lengths of the strings in the pendulum impact the pattern that you get?
 - Origami Constructions. Learn to construct buckyballs and tori by folding PHiZZ modules and joining them together. Learn about curvature and Euler characteristics of geometric shapes. Can you figure out a way to use PHiZZ modules to create a knot, a two-holed torus, or a tri-torus?
 - Game Theory. Find winning strategies for several games. Design your own game and analyze winning strategies.
 - Popularity. Design a mathematical model that predicts the popularity of a pop song, a web site, or an online video over time. What factors contribute to its popularity? What causes it to lose popularity?
 - Sona Designs. The Chokwe people, who live in central Africa, have a tradition of drawing intricate patterns in the sand to accompany stories. Learn how to draw some traditional sona designs and investigate the mathematical patterns in designs generated by the same underlying rule.
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