~ Calendar ~

September
• Weekend Workshops at Carnegie Mellon and Winchester Thurston
  Oakland

October
• 10/4: Early registration deadline for EXPLORE testing
• Weekend Workshops at Carnegie Mellon

November
• 11/9: EXPLORE test
• Weekend Workshops at Carnegie Mellon, Ardmore and Glenside

December
• 12/12: Final registration deadline for January EXPLORE testing

January
• Spring Weekend Workshops brochures and newsletters mailed.
• 1/15: Final registration for February EXPLORE testing
• 1/25, 26: EXPLORE test

February
• 2/15: EXPLORE test

Math-Talented Children:
Suggestions for Parents
By Dr. Ann Lupkowski-Shoplik,
C-MITES Director

Another school year has begun and parents of talented students have lots of questions about how to challenge their children in math. Below are the responses to some of the questions parents ask C-MITES staff members.

What options are available for math-talented students?

• Enrichment within the regular classroom (one of the most common approaches)
• Independent projects in math
• Placing several mathematically talented students together for a math class (also known as ability grouping)
• Acceleration (moving up a class for mathematics, or skipping an entire grade)
• Working individually with a teacher in school by moving systematically through a set curriculum
• Participating in a distance-learning program

A parent might ask for extra enrichment within the regular classroom. If the regular classroom teacher is willing to do the extra work, this is a simple and straightforward option. It's also relatively easy to move a student from one classroom to another to accelerate him or her in mathematics. In contrast, it might take several years to set up a new program where mathematically talented students are identified and grouped together for specially-designed instruction.

What is the Diagnostic Testing -> Prescriptive Instruction model?
The DT->PI model, first developed in the 1970’s by Dr. Julian Stanley at Johns Hopkins University, is useful for tailoring instruction to exceptionally math-talented students. Students are carefully tested to determine what they know and what they have not yet learned in mathematics. Prescriptive Instruction is the heart of the model. A mentor works with the student on topics he or she has not yet mastered. Rather than spending a lot of time reviewing

Continued on page 3
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Thinking About What Class to Take Next Summer?
Try Math through the Ages!

The question is: Where does math meet the humanities? The answer is Math through the Ages. During this two-week summer course students learned things in class that there just isn’t time for in “regular school.” In this unique merger of math and the humanities students discovered some interesting stories about well-known mathematicians. For example, John Napier was in league with the devil. Blaise Pascal almost died and became more concerned with spiritual things, etc. Ludolph van Ceulen hand-calculated 35 digits of pi and had them engraved on his tombstone, until his wife had it swapped out for “something less nerdy.” Blaise Pascal’s calculating box (Pascaline) never made it big because it could do the work of 6 hand calculators and people were afraid it would cause unemployment! Students learned a little about ancient civilizations/geography–Babylon, Mesopotamia, Greece, Rome, Egypt. Class was a lot more than just math; they covered finger counting to modern computers. With internet, computers, calculators, phones that do anything/everything, this class helped the students see how things developed over time.

C-MITES is thinking about changing the class name to Math Time Travelers because that’s what the students did during the course. A highlight of the class was playing Wheel of Fortune. Students had to think about those game changing “Lose a Turn” and “Lose All Points” that happened from time to time. They had fun experimenting with the mobius strip, cutting paper - some cutting again and again until the paper was too skinny to cut any further. They enjoyed playing Mancala and had a little tournament. Students sang pi songs for a pi party. They enjoyed the buzzer, Eggspert, when they were playing Jeopardy. On the last day of class parents, siblings, and friends were invited to watch the Jeopardy competition.

Topics covered included:
History of Mathematics
Primitive Number Symbols
Unknown Origin of Counting
Counting Systems – Babylonian, Egyptian, Mayan, Greek, Roman Mathematicians – Gauss, Eratosthenes, Pascal, Fibonacci, Napier, Archimedes, Pythagoras, Mobius
Counting and Computing Devices
Finger Counting Zulu-Style
Cuneiform Birthday Tablet
Sieve of Eratosthenes
Make a Mancala Game, Counting Ball, Senet Game, quipu, Set of Napier’s Rods, Abacus, and Mobius strip
Rhind Papyrus
Egyptian Style Multiplication
Pascal’s Triangle
Eye of Horus
Knotty Records of Incas
Fibonacci Sequence
Lattice Multiplication Puzzle
The Pythagorean Theorem
Discovering Pi
Team Competitions – Wheel of Fortune and Jeopardy

Thanks to the Summer Program Host Schools!

C-MITES would like to extend a sincere thanks to the following sites that served as Summer Program locations:

Aquinas Academy, Greensburg
Carnegie Mellon University, Oakland
The Ellis School, Oakland
Forest Hills High School, Sidman
Highlands High School, Natrona Heights
Learning Enrichment Center, Warren
Linmont Elementary School, Lewisburg
Mill Creek Elementary School, Warrington
St. Alexis Catholic School, Wexford
Upper St. Clair High School, Upper St. Clair
Winchester Thurston School, Allison Park and Oakland

We really appreciate the support!
What happens if my child runs out of math?
You shouldn't really be concerned that your child will run out of math, because there is always more math to study (ask any grad student in math!). However, the school your child attends might not offer the right level of math at the right time. You might need to be creative in getting the right math course delivered to the student. You might accomplish this by having the student go to a different building for math, by having a tutor work individually with the student, by participating in a distance learning program, etc. When making a plan for students to accelerate in mathematics, it is important to think about the long-term implications, and how the students will study mathematics in the future. However, the fact that there might not be a math class sometime in the distant future for an advanced student to take shouldn't prevent a student from being moved ahead now.

What should we consider when accelerating young students in mathematics?

- Students should be consistently challenged in mathematics throughout the school years.
- Students need to have a good number sense and a good understanding of arithmetic before moving into advanced mathematics.
- It is better to work through mathematics systematically rather than randomly presenting interesting math problems to the students. They should study mathematics in an organized fashion so mathematical ideas are allowed to build upon each other.
- Some children are ready for algebra in 5th grade or even younger. The Diagnostic Testing->Prescriptive Instruction model is very useful in helping us understand which students have a good understanding of pre-algebra concepts and are ready to move on.
- The Iowa Algebra Aptitude Test (Riverside) and the Orleans-Hanna Algebra Prognosis Test (Harcourt Brace Educational Measurement) are tests designed to measure students’ readiness for algebra and are useful for young students. Both tests can be administered by a teacher.

What can we do at home?
Parents can challenge their children in math at home by playing games. Many classic games such as dominos, Pente and chess have a strong mathematical component. Other games include Battleship, checkers, Connect-Four, MasterMind, and Othello. They are great for teaching logical thinking and practicing reasoning skills.

Resources
Art of problem solving: http://www.artofproblemsolving.com/
Distance learning programs include EPGY at Stanford University (http://epgy.stanford.edu/) and the University of Nebraska-Lincoln online high school (http://highschool.unl.edu/).
www.hoagiesgifted.org/math.htm contains links to other sites your child might enjoy.
George Lenchner's Creative Problem Solving in School Mathematics (available from www.moems.org). The program he developed (Math Olympiads for Elementary and Middle School Students) provides challenging problems for young students.
Math Forum: www.mathforum.org
Ed Zaccaro's Challenge Math: http://www.challengemath.com/
Welcome, Ruth Ann

We’d like to extend a C-MITES welcome to our new C-MITES Assistant, Ruth Ann Maloney. Ruth Ann started working in the C-MITES office in June, and she’s one of the friendly voices you’ll hear when you call the office to check on your child’s classes.

Ruth Ann is a native Pittsburgher who shares a big smile when talking about her city. She said her “perfect day” would begin with walking around in the Strip District checking out the shops and the restaurants. She would then spend the afternoon at the Heinz History Center, which she visits often because there is always a new exhibit to see. She gets a kick out of the Kennywood roller coaster car near the entrance to the History Center, and she recommends checking out the interactive exhibits in the Sports Museum section. Her perfect day would conclude with dinner at Primanti’s and a ride up the Incline to enjoy the view of the city lights at night.

Ruth Ann resides in Penn Hills with her daughter (a C-MITES student whose favorite class so far is Chemistry and Analysis of Water) and their cat Remi and Bichon Noel. When she’s not busy taking her daughter to cheerleading and C-MITES classes, she enjoys scrapbooking and doing crossword puzzles.

Ruth Ann says she’s happy to be a part of the C-MITES office. She enjoys contributing to such a worthwhile program for children. We’re glad to have you here, too, Ruth Ann. Welcome to the team!

Warren County Does it Again!

For the fifth consecutive summer C-MITES was able to offer a summer program at the Learning Enrichment Center in the Warren Area School District thanks to the Community Foundation of Warren County. For the past five years Amy Stimmell and C-MITES have teamed up to plan and provide fun, challenging and educational summer camps for Warren area students. Courses have included: Informal Geometry, Harry Potter’s Science Adventure, Solve a Murder Mystery, Structures and Explorations in Science. Students and parents commented on how much the students learned and how much fun they had during the camps. The teachers—Kellie Blasco, Andrew Pollard, Butch MacQueen, and John Fedak—have made the Carnegie Mellon classes a huge success. We would like to extend our sincere thanks to the Learning Enrichment Center, the Community Foundation of Warren County, Amy Stimmell, teachers and teaching assistants, students and parents for supporting our program in Warren County.

SAVE THE DATE...
PAGE Conference 2014

Gifted Education: A National Treasure for the Future
April 24-25, 2014
Lancaster, Pennsylvania
Millersville University’s Ware Center
Keynote Speaker: Dr. James Delisle

“My 9-year-old son has had opportunities to explore chemistry in a college lab, learn about Newtonian physics, and program his own video game – and that’s just in the last two months. He is looking forward to building a robot and using forensic science to solve a mystery next month. Thank you, C-MITES.”

C-MITES Parent
C-MITES Summer Program

As we began the Summer Program this year we had over 1100 requests for summer placement. Some of the classes had well over 75 students apply. The C-MITES Summer Program has become quite popular with 487 students participating. We had students as far as Qatar send in applications. This year’s summer group consisted of 9 students from Qatar, 1 from Ontario, 7 from Ohio, 3 from Connecticut, 3 from Florida, 2 from New Jersey, 2 from Texas, 2 from Virginia, 2 from West Virginia and 1 each from California, Kentucky, Montana and New York. Friendships go across the country and even the ocean! Applications for the first and second grade classes totaled well over 100. This is the second summer C-MITES has conducted classes for the first and second grades and we plan to continue to offer programs for our younger population.


There were fourteen different classes on the CMU campus. For five weeks students participated in the classes and made new friends while exploring many interesting math, science and technology topics. Bridges were built and computer games were created by the students. The green engineers discussed ways to improve the environment while the solar system astronomers studied the starry night. Let’s not forget the Math Through the Ages class who had a pi party, created numerous mathematical devices and enjoyed a spirited game of Jeopardy on the last day of class! Some of the students who participated in the morning academic classes also participated in the FITT camp in the afternoons. Those students were literally very tired campers when they left the campus for the day.

There were 33 classes at 12 different sites during the program. Twenty-eight were in Allegheny County and five were in other counties. A total of 7 math classes, 18 science classes, 1 humanities course, and 7 technology classes were offered and enjoyed by the 487 students who participated. Thanks to those students who shared a part of their summer in the C-MITES program and to the teachers who made it possible.

Teacher Feature

The teacher featured in this issue of the C-MITES News joined our program in 2009. Miss Allyson Tylka became an assistant in several weekend and summer courses.

She helped in the Roller Coaster Physics, Robotics: Programming and Design, Brain Games, Water Works, Raging Rainforest, and Awesome Body classes. Two years later, Ally started teaching a variety of science and technology courses and made them enjoyable for all of the students who participated!

The summer courses that Ally has taught over the years include Programming Using Alice and Amusement Park Physics. In her Programming Using Alice course students learn computer programming skills in a fun and creative way: by storytelling! They assume the role of a director of a movie or the creator of a video game where 3D objects in their on-screen virtual world move around according to their directions. They learn traditional computer programming concepts such as loops, nesting, if/else statements, and functions. Their creations included video games, skaters that spin and glide on ice, and rock bands. In the Amusement Park Physics class, students discussed what it would feel like to blast off in a space shuttle or float freely in outer space. They explored, measured and experienced speed, acceleration, G-forces, weightlessness, motion, and gravity. Students used an elevator and a playground as “simulators” as they prepared for the big mission to the amusement park! At the park, students used their instruments they create during the week to measure actual forces they experience on the rides.

If you have ever taken a weekend class at CMU you probably were here on a day that Ally was teaching. She has taught many, many weekend classes over a four year period. Some of the classes include: WeDo Robotics, Simple Robot Machines-1, Simple Robot Machines-2, Maglev, Amazing Robot Mechanisms, and Build a Robot.

Students who have taken Ally’s courses have commented on how much they learned and how fun the learning was! They came out of class eager to share their experiences with their parents and friends. Teachers who have worked with Ally want to work with her again, because she is so wonderful!”

Ally is a teacher in the Mt. Lebanon School District, certified in elementary and special education. She received her degree from Bethany College in West Virginia, graduating summa cum laude. When she is not busy teaching during the school year and in the C-MITES programs she enjoys babysitting and tutoring for several families in her neighborhood. In her free she enjoys singing, exercising, and spending time with her family and friends. Ally is truly an outstanding C-MITES teacher, and we are very happy to have her as an instructor in our program.

Allyson Tylka - C-MITES Teacher
The Davidson Fellows Scholarship

The Davidson Fellows Scholarship awards $50,000, $25,000 and $10,000 scholarships to extraordinary young people, 18 and under, who have completed a significant piece of work.

Application categories are Mathematics, Science, Literature, Music, Technology, Philosophy and Outside the Box. Davidson Fellows are honored every year in Washington, D.C., with Congressional meetings and a special reception.

To be eligible for consideration as a Davidson Fellow, applicants must:

• Be 18 or younger as of September 29, 2013.
• Be a U.S. citizen residing in the United States, or a permanent resident of the United States residing in the United States, or be stationed overseas due to active U.S. military duty.
• There is no minimum age for eligibility.
• The Davidson Institute is looking for students whose projects are at or close to the college graduate level with a depth of knowledge in their particular area of study. This scholarship is not geared toward students at the novice level.

For more information, visit the Davidson Institute website at www.davidsongifted.org.
Order your C-MITES apparel today!

Order your very own C-MITES t-shirt or sweatshirt and be the envy of all your friends! Simply fill out the order form and return it to our office with your check made payable to “Carnegie Mellon University.”

* The C-MITES tie-dye t-shirt has the “C-MITES Carnegie Mellon” logo. Cost is $17.
* The C-MITES sweatshirts are forest green. They have a hood and zipper and feature the Carnegie Mellon C-MITES logo in white. Cost is $27.
* Proceeds from these sales go to the C-MITES scholarship fund.

Make check payable to Carnegie Mellon University

Send to:  
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Dear Friend of C-MITES:

As you may know, C-MITES is funded by grants, gifts, and income received from course tuition. Although approximately 85% of our income is derived from tuition, we still depend on grants and gifts to pay for our ongoing office expenses and for scholarships.

If you would like to make a donation to C-MITES, please complete and return this form to the address below. You may wish to ask your employer whether they would match your contribution. Any amount would be greatly appreciated. Please indicate whether or not you would like your name published as a donor in the next issue of our newsletter. Your contribution is tax-deductible; you will receive a letter from Carnegie Mellon University acknowledging your gift. People making a donation of $100 or more can have their names listed on the C-MITES 2014 Summer Program t-shirt.

Thank you again for supporting C-MITES!

Thank You!
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