MC^2 Newsletter

Lenses on Learning Academies

MC^2 is partnering with Lenses on Learning to provide quality professional development for the purpose of improving student learning and achievement in mathematics during the June Academies.

Lenses on Learning (LOL) is a nationally-developed, research-based, piloted program specially designed for district leaders. This program has been instrumental in improving mathematics instruction / learning throughout the nation and in New Mexico.

Mike Reese, Associate Superintendent, Moriarty School District, New Mexico, states

"Lenses on Learning has been the single most important factor in our district's success in implementing a K-12 Standards-Based math initiative. The course presents a unique opportunity for administrators and teacher leaders to develop a common perspective and understanding. The experience set the stage for us to put in place a strong and unified team, committed to the full implementation of our program."

Dates for Lenses on Learning Academies:

June 2nd - June 3rd (Las Cruces)
June 10th- June 11th (Hobbs)
June 17th - June 18th (Las Cruces)
June 24th - June 25th (Las Vegas)

Online registrations at mc2.nmsu.edu are still being accepted for June 10th-11th; June 17th-18th; & June 24th-25th.

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Summer Math Academies

The summer academies development is in full swing. The MC^2 staff is working hard to develop an academy that offers a strong math content base, digging into the Standards, high yield strategies, investigating math ideas through vertical alignment, and many more activities. Teachers will need to bring with them to the academy:

Middle School Teachers
(Note: please bring 5 or more guides you plan to implement Fall '09)
- ❖ 6th Grade: CMP2 Teacher's Guides
- ❖ 7th Grade: CMP2 Teacher's Guides
- ❖ 8th Grade: CMP2 Teacher's Guides

High School Teachers
- ❖ Math Textbook and Teacher's Guide

Registration deadlines have passed but there are a few openings. To register for any of the summer academies, log onto the MC^2 web site at http://mc2.nmsu.edu .

During the morning sessions, participants will dig into grade level material and assessment. Each day we will look at the Standards/Benchmarks and the Process Standards. Teachers will spend the morning digging into these and tying them into the units they teach throughout the school year. Each teacher will be involved in backwards planning and identifying what the students' learning should look like at the end of a unit. Teachers will also work with high yield strategies and learn how to weave them into their math lessons to help develop stronger math thinkers and learners.

The afternoons will be divided into vertical alignment, breakout sessions and reflection time for school teams. There will also be sessions for new teachers. Throughout each day, sessions will be unified by their common focus on the understanding, teaching, and learning of mathematics.

The man ignorant of mathematics will be increasingly limited in his grasp of the main forces of civilization.
~John Kemeny

Ted's Monthly Math Problems

1. The price of a CD is $13.90, which includes 7% sales tax. What was the price of the CD before tax was added? Explain your method for solving this problem.

2. A saying is encoded in the rectangles below. Group together the similar rectangles to find the saying.
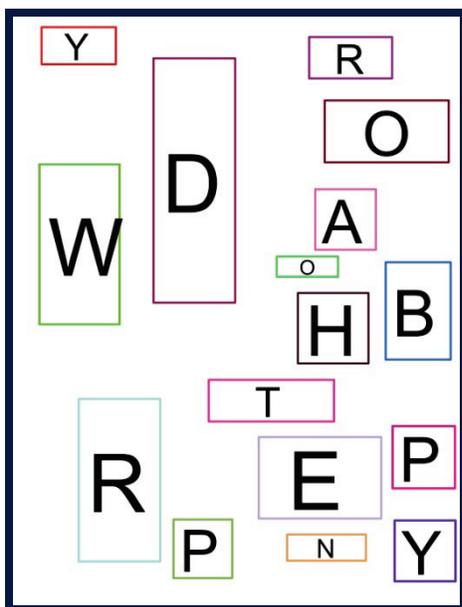
Email your answers to Ted, stanford@nmsu.edu

March Answers:

Problem 1 Answer (Chicken): *18 days*

Explanation: Replace "a chicken and a half lays an egg and a half" with "one chicken lays one egg", and you will get that "one chicken lays one egg in a day and a half". So 12 eggs times a day and a half per egg is 18 days. There are other solution methods as well. The tricky part is to realize that you can only rescale two of the three numbers at a time – you *can't* divide all three numbers by 1.5 and say that one chicken lays one egg in one day.

Problem 2 Answer (Peanut Butter):
The probability must be greater than 9/16.

Explanation: 3/4 of the time you will get a Natural brand greater than the first quartile, which is a quality rating of about 57. Also 3/4 of the time you will get a Regular brand below the third quartile, which is about 54. Since the random choice of a Natural peanut butter is independent from the random choice of the Regular peanut butter, the probability that the Natural will be above 57 and the Regular will be below 54 is

Problem 2 Answer continued: $(3/4) \times (3/4) = 9/16$. Remark: There isn't enough information in the box plot to give an exact answer to this question. You have to use some kind of estimation strategy or lower bound strategy. There are other possibilities besides the explanation above. For example, the 9/16 lower bound can be improved to 10/16 by observing that the lowest 1/4 of the Natural brands have a higher rating than the lower 1/4 of the Regular brands. If you want an exact answer to the problem, you can look up all the peanut butter data in *Samples and Populations.*

Getting to Know the MC^2 Staff:

Doug Kurtz

Doug Kurtz has been working with MC^2 for the last five years. He received a PhD in mathematics from Rutgers University in 1978 with a specialty in harmonic analysis. By the way, he majored in math as an undergraduate and as a junior in college he considered a career in high school teaching and took some education courses. At the end of his junior year, the department nominated him for a senior honors/research program and that helped him decide to go to graduate school. He came to NMSU in 1981 (after a 3-year post doc). In the late 1980s, he worked on a calculus curriculum development program; in the early 1990s, he coordinated some professional development for high school math teachers.

Doug is currently a professor of mathematics and Associate Department Head. As a professor, he teaches and does scholarly work. His early career scholarly work was research in abstract mathematics; more recently, his scholarly work has involved professional development for teachers. As Associate Department Head, he does some administration, planning and scheduling, and interaction with students over advising and classroom issues.

His vision for math educators is that they can allow their students to be smart in class. One of his most enjoyable experiences is having students show him a new way to understand a problem. He wants teachers to have the same joyful experience in their classrooms. He thinks this requires a teacher who has courage and the ability to evaluate her/his students' alternate solutions. His vision for MC^2 is that we can provide the support for that courage, and lead teachers to the deep mathematical understanding needed to have these classroom experiences. In Doug's time away from work he likes reading, and he has started a men's book group. He enjoys reading about audio and video equipment, and watching movies and listening to music in his home theater. He can be seen riding his bike around Las Cruces. He designed his and his wife's house and their two remodels --- but he does not get to do that very often and does not care to do any of the construction.

Q&A's

Principles for Principals

As the school draws to a close, take some time to reflect on the school year. Ask yourself the following questions.

1. *"Take a few minutes to think about the most rewarding experiences you have had as a principal. What are the qualities of leadership that made these experiences so memorable? What are the critical characteristics of the leadership experiences for you as a teacher, learner, or leader? Write down 3-5 one-word descriptors."*

2. *"Take a few minutes to think about a leadership issue that you are struggling with right now. How might you use the elements of respect, trust, and relationship to influence how you will respond to your current dilemma? Make a note of one thing you will do in this situation when you get home, based on a new insight. (5 minutes)"*

These questions are part of a reflection protocol for leaders and are taken from the *Qualities of Educational Leadership Exercise* developed for the ATLAS Principal Institute by the National School Reform Faculty Harmony Education Center, retrieved on May 17, 2009 at

http://www.nsrfharmony.org/protocol/index.html

PLC CORNER

We all are learning how important reflection can be. In your next PLC you might use the following questions to help your group to reflect and learn from this past school year. Give each member a few minutes to think about the questions and then share those thoughts.

- Think about a success you had this year in the classroom.
- Why was this experience a success to you?
- What did you learn from the experience to use in the future?
- Think about a disappointment you had this last year.
- What made this experience a disappointment to you?
- What can you do in the future to use this as a positive learning experience?

Celebrate!!

Take a few minutes to celebrate the good work that everyone has done this past year. Celebrate the success and each learning experience that has happened this year.

Web Resources

✓ Cathy Kinzer recommends reading "*You Do the Math: Explaining Basic Concepts Behind Math Problems Improves Children's Learning*" on ScienceDaily's website,
http://www.sciencedaily.com/releases/2009/04/0904101 43809.htm

✓ Recommended Connected Mathematics Project Resource: *Algebra in CMP* at
http://connectedmath.msu.edu/mathcontent/algebra.html

✓ The article - *Getting Acquainted with the Essential Nine* by Laura Varlas from ASCD Curriculum Update Winter 2002 - provides some strategies which will most likely improve student achievement across all content areas and all grade levels.
http://www.middleweb.com/MWLresources/marzchat1.html

Updates on Grant Proposals

❖ NM awarded $510,000 to MC^2 to sponsor elementary grade level academies in Las Cruces and Hobbs; continue to fund 3 FTE field staff; pay in-state travel for staff, and sponsor 3-day Leadership Academies for principals and teachers during the summer of 2010 in Hobbs, Las Cruces, and Las Vegas. Thanks to Cathy Kinzer and Wanda Bulger-Tamez for taking the lead in writing and submitting the proposal.

❖ NSF Grant Proposal – MC^2 Leadership Institute for Teachers (LIFT) was written by MC^2 staff and mathematicians. If funded, the grant will fund two cohorts of 30 mathematics Teacher Leaders each to participate in two, two-year institutes; support mathematicians and educators to design and teach courses to blend mathematical concepts using K-12 vertical alignment with knowledge and skills in pedagogy and leadership; support site-based mentors to provide weekly support to Teacher Leader candidates at the school site and help them transition the learning from the institute into practice; and support qualitative and quantitative research.

We want to hear from you!

Email your ideas and suggestions to:
Patricia at pcarden@nmsu.edu

Thank you to everyone who provided information for this month's newsletter!

MC^2 Staff wishes you a wonderful summer!