Math carnival time

BY ANDREA CHRISTIE ELKIN, STAFF WRITER

Come one, come all to the biggest carnival in town—the Math Midway mathematics carnival, that is. A traveling exhibition, the Math Midway is now making its way around the United States; the next stop is Dayton, Ohio. (To see the schedule, go to http://mathmidway.org, and click on VISIT.) "We themed it as a carnival to highlight the fact that math can also be fun and bright and engaging," says Cindy Lawrence, chief of operations for the Midway's parent organization, Museum of Mathematics (a.k.a. MoMath).

Begun in 2008 at the World Science Festival held in New York City, the Math Midway houses twenty exhibits that Midway founder and MoMath Executive Director Glen Whitney calls "full body interactions." The exhibits present seemingly impossible problems with math-based solutions: Square-wheeled tricycles can be ridden smoothly on a circular track of catenary arcs, and guests can slide plastic polyhedra through a plane of laser light to find interesting cross sections. Each exhibit is designed to engage people of all ages. "[Kindergartners] love the surprise of finding a rectangle in something that appears to have no corners," says Lawrence. "It also works with graduate students…. They look at it in a different way: more complex, devising formal proofs."

Although the exhibits can be tailored to varying ages, abilities, and learning styles, they all share fascinating elements, explains Jennifer Cottone, World Science Festival volunteer coordinator. "First, they have hidden math concepts that are not always obvious. Second, they attract math educators who see the value in presenting the exhibit as a lesson to their students. Third, they have a goal with more than one solution."

MoMath has worked hard to make the experience at the Midway educational as well as fun, and neither aspect ends when students leave. The MoMath team has created classroom activities for before, during, and after visiting the Midway that coordinate with the exhibits. "We produced a teacher's guide for three different levels that will be invaluable for future field trips," says Mary Ann Mansfield, MoMath working group co-chair.

If you happen to be near the Boonshoft Museum of Discovery in Dayton, Ohio, February 4–April 29, 2012, you can see the full Math Midway exhibit. With grant support from the Alfred P. Sloan Foundation, MoMath is now working to create Math Midway 2 Go, a collection of six exhibits from the Math Midway. Designed specifically to be more lightweight and portable, the traveling unit will appear at science festivals around the United States. Finally, if you are anxious to have the exhibits appear in a local venue, petition the MoMath office (http://momath.org/contact/). "We can only really go to science centers that have a budget for traveling exhibits," explains Lawrence. "Let us know if you have a center near you, and we will contact them," she continues, quickly adding, "People can reach out to their centers as well. It always helps to have community support."

Exhibits like the popular square-wheel tricycle have people of all ages lined up to try out the Math Midway activities.

Free presentations

Math Encounters is a free, public presentation series celebrating the spectacular world of mathematics. Offered by the Museum of Mathematics and the Simons Foundation, the interactive demonstrations take place in New York City. For those who do not live near the Big Apple, videos of past Math Encounters are now available online at www.youtube.com/use/MuseumOfMathematics.

A new Museum of Mathematics*

Starting in late 2012, math enthusiasts will have a permanent place to visit that will wow their friends with the wonders of math—The Museum of Mathematics (MoMath) in New York City. "The goal [of the museum] is to create a place where people can experience math on their own," says MoMath Executive Director Glen Whitney. "[We want] a place with hands-on, interactive activities that highlight the breadth and beauty of math," he continues, "and allow people the opportunity to experience that aha moment of discovery where you look at things in a whole new way."

The newly renovated 20,000 square-foot space will be located at 11 East 26th Street in Manhattan, will house forty-five exhibits, and will host a special exhibition gallery of mathematical art. What exactly can museumgoers expect to experience? "The museum will be in the same spirit [as the Math Midway]," declares Whitney. "[Guests] should expect to come and be active. Many of the exhibits are full-body interactions."

Lawrence elaborates: "When we selected the exhibits for the Midway, we worked on a scale from one to three, one being great, three being we were less sure about it." She continues, "Then we took the ideas, and only the ones that were off the charts—better than our scale—were the ones we built. We're trying to use a similar process for the museum."

Residents of the New York City metropolitan area and visitors will get a chance to explore the museum this fall; in the meantime, museum officials are keeping busy with the Math Midway project, the website, and the Math Encounters videos (see related sidebar, p. 332). "Who knows what the future will hold?" poses Whitney. "People have asked about opening a branch on the West Coast, in Texas, even a virtual museum," he says. "I'm willing to take this wherever the turn of chance takes us. We're always willing to partner with other organizations to give people the chance to experience math."

One example of that willingness to partner is the collaboration between NCTM and MoMath. At NCTM's July 2011 meeting, the Board of Directors passed a motion to form a joint task force with the Museum of Mathematics to develop an initiative designed to change the public image of mathematics. The task force had its first meeting at the MoMath offices in New York City in September 2011 and expects to announce its recommendations and plans before the official opening of the museum.

For more information about the Museum of Mathematics, Math Midway, or Math Encounters, visit www.momath.org. While you are there, check out the MoMath logo at the top of each page. As you navigate from one area to another, the logo changes. Can you tell what each logo is?

COACHES' CORNER

Informal walkthroughs

BY ROBYN SILBEY, PD AND CAMPUS CONSULTANT

What is happening during the math block at your school? How often are teachers integrating such best practices as rich discourse, manipulatives, engaging explorations, and problem solving into their lessons? Informal, daily walkthroughs offer data that can lead to a truthful assessment of the math instruction in your building. For the most accurate results, consider these guidelines:

- **Choose** a different part of the math block each day, if possible.
- **Stay** in each classroom for only 2–5 minutes.
- **Ask** students (a) what they are doing and (b) why it is important to learners.

Teachers should view your walkthrough as supportive, so you might occasionally perform assorted services during this time. For example, secure manipulatives for a lesson, provide an unexpected opportunity for the teacher to leave the room for a moment or two, or clarify a misconception during a conversation with a student. Keep two things in mind:

1. Never carry a clipboard or notepad. The informal walkthrough should be used to furnish you with data that will support teachers and inform your professional development, not as an evaluative report to administration. (If you need to make notes for yourself, do that outside the classroom.)
2. Focus on the classroom atmosphere and student engagement as well as content and pedagogy. Students who feel smart are motivated to learn and share their ideas with others.

Put "nice notes" in teachers' boxes when you see effective practices, and call on those teachers to share their strategies with teammates or the entire staff at a later date. Questions and comments about this article can be directed to Silbey at rsilbey@hotmail.com.

There is still time *

Nominations are now being accepted for Presidential Awards for Excellence in Mathematics and Science Teaching for elementary school teachers (K–grade 6). The deadline for nominations is April 1, 2012. The nomination form should be completed early enough to allow the nominated teacher time to meet the nomination application deadline of May 1, 2012. To access the form and guidelines, go to http://www.paemst.org, and click on Nominate a Teacher.