



'Smashed' keeps its apples in the air



Yo-yos have potential energy. COURTESY MIKE PETERS

Smashed

Gandini Juggling

Thursday, Dec. 13-Sunday, Dec. 16

Friday, Dec. 14, 6 p.m., Gandini, Professor Mika Munakata and Professor Ashuwin Vaidya

Discuss "Mathematics in Unexpected Places."

Saturday, Dec. 15, talk back post-show with Gandini, Kati Yla-Hokkala, and Arts + Cultural Programmings'

Executive Director Jedediah Wheeler.

Alexander Kasser Theater, Montclair State University, 1 Normal Ave.

Peakperfs.org, 973-655-5112.

Gandinijuggling.com

By GWEN OREL

orel@montclairlocal.news

At Montclair State University, students are jumping rope, juggling balls and playing with yo-yos. And getting credit for it.

Frankie Hoffer, a sophomore, dribbled a ball. "When you think about dribbling, you don't really think about it in depth," he said. "It's more like tossing on the ground, but it's about how much force you're putting in, the height you're dribbling from."

He demonstrated. "Waist height." The ball bounced. "Head height." The ball bounced differently.

If that reminds you of physics, you're right.

The students are taking "Contemporary Mathematics" from mathematical sciences professors Mika Munakata and Ashuwin Vaidya. The offering is part of a National Science Foundation-funded project called "Engaged Learning Through Creativity in Mathematics and Science."

Students working with jump ropes talked about patterns. Students working with yo-yos talked about potential energy.



Students investigate the physics of their toys. COURTESY MIKE PETERS

Groups had been assigned different props, then asked to explore mathematical questions around their toy, and then find articles about them. They were then going to create posters, the best of which will be displayed in the lobby of the Alexander Kasser Theater during performances of "Smashed" by Gandini Jugglers. The UK troupe brings its production to Peak Performances for its US premiere Dec. 13-16.

All of the students were learning to juggle.

Tomorrow, Friday, Dec. 14, the professors will discuss the connections between science, math and creativity in a talk called "Mathematics in Unexpected Places" with juggler Sean Gandini. "Smashed" involves nine jugglers, 80 apples and is a hybrid of juggling and circus.

It's not unusual for academics at Montclair State University to coordinate with Peak Performances, now in its 14th year, said Executive Director Jedediah Wheeler. He is also executive director of Arts + Cultural Programming at MSU.

A grant from the Doris Duke Foundation began a process eight years ago that included what he called a "think tank," specifically involving professors who are not in the arts, he said. The program is called Creative Thinking, and has three sections per semester (Registration is going on now, for information visit creativethinkingmsu.tumblr.com).

The math class, created by Munakata and Vaidya, is not actually a part of that Creative Thinking, but runs parallel to it, Wheeler explained.

"The initiative here is to expose students to creative campus possibilities," he said. It's not about becoming a dancer or an actor, but about creativity in all disciplines. For those who do want to be dancers or actors, there are opportunities to work in various ways on shows at Peak Performances as well, he said.



A newspaper baton is a prop in "Smashed." COURTESY GANDINI JUGGLING/PEAK PERFORMANCES

SEDUCED BY PATTERNS

“The mathematics were what seduced me,” said Sean Gandini, by phone from France. His troupe is something of a sensation: The Guardian writes, “When it comes to juggling, The Gandinis pip everyone else.” The Evening Standard has called their work “poetry in motion.”

“As a child I loved patterns,” Gandini said. Juggling has so many patterns, that it became choreograph-able, he said. “It could have been dance or something similarly visual.”

Before he became obsessed with juggling, he was a magician. Then he saw someone juggling five balls in Covent Garden.

“It was the most hypnotic thing. For two years I was the most unsociable being on the planet,” Gandini said. “I dropped out of university to do something creative in London.”

He is English and Italian, and grew up in Havana, France and Canada, as well as England, he said.

What he and his troupe do is a bit different from “classical juggling,” a term which means a seven-minute circus routine that builds with bigger and bigger tricks, he explained. “We launched what they call contemporary juggling. Its main interest isn’t the fact that it’s difficult or sensationalist, but that we can choreograph it in different ways.”

Instead of short routines, Gandini Juggling puts on a one-hour show.



Eyes or apples? COURTESY GANDINI JUGGLING/PEAK PERFORMANCES

“Smashed” is influenced in part by the work of the late choreographer Pina Bausch, who among other things was known for putting dance in a theatrical context, even using some text. The piece was made quickly, Gandini said, but has proved to be one of his most popular, and has been performed about 700 times around the globe.

Montclair’s performance will be its US premiere.

“I’m intrigued to see how an American audience will read it,” he said. The piece is set at a tea party. Gandini was intrigued by the “journey between order and chaos. There’s something about tea and crockery. Things get smashed. Before they are smashed, they are used.”

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This is all done to the music of Bach, Tammy Wynette, Louis Armstrong. Audiences laugh as well as gasp.

Gandini said he is looking forward to viewing the math projects that will be displayed in the lobby of the Kasser.

"I often work with circus students or dance students. It's a treat to work with math students.

"I think music and dance are forms of visual mathematics."

Gandini uses mathematical notations, known as "site swaps," that record the pattern of the juggling. "Say five people were juggling 17 things and you wanted it to be to Stravinsky, and every time a B flat appeared, a red ball was thrown between person three and four. You could very quickly score that," he explained.

"It's a very practical way of using numbers to generate patterns."

He compared it to reading music, laughing that some of the best jugglers don't like it. "What it's fantastic at is quickly choreographing."

Both Gandini and his wife, rhythmic gymnast-turned-juggler Ylä-Hokkala, perform with the troupe.



Head high vs. waist height changes the way the ball bounces. COURTESY MIKE PETERS

THE AGENDA IS THE AUDIENCE

The syllabus for "Contemporary Mathematics" has been in development for a few years, Munakata said. "We looked at the typical contents of the course and thought, how can we connect the content to elements of creativity, and how can we teach that?" And that led to the activities.

"We tried to link the history, the mathematics and their aspirations," Munakata said.

"What we're trying to emphasize is that it's about the process, and with that way of thinking, it's about appreciating different solutions and approaches. And so we ask the students to kind of let go of what they think mathematics is because they always think goes to memorize this formula or have to go step by step through the algorithm or whatever and we want to relate to them is that mathematics is more than that that. It's a way of communicating different kinds of reasoning and discovering new things.

“And we think that that’s more transferable than the formulas that they’ll memorize.”

For Wheeler, joining creativity to math and science and other courses outside the arts has a simple reason:

“Audience. The College of the Arts is creating new performers. I feel that it’s my responsibility on this campus is to create new audiences. And the best way to do that is show people it’s not an escape, it’s not just an extracurricular, it’s a co-curricular experience — which I hope will last a lifetime.”