

# Miniature Golf Holes Show That Grant IMSA Students Learned About Angles

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Several students participating in the Illinois Mathematics and Science Academy Fusion program at Grant Middle School in Fairview Heights made presentations at the Grant Community Consolidated School District 110 Board of Education meeting last week which not only impressed everyone in attendance but also helped underscore the supplemental benefits offered, from an educational standpoint, by the involvement in the IMSA effort.

Accompanied at the meeting by GMS science teacher Mel Evans, math teacher Phyllis Kamm and District 110 IMSA Fusion Coordinator Cathy Barnes, the students, some as individuals and others as pairs, came forward with what at first glance may have resembled science fair projects but instead were their own designs and creations for miniature golf holes. Each presentation consisted of an explanation of the design concept involved in the hole and showing how the golf ball travels through the parts of it.

Prior to the demonstrations for the board members, a visitor from the Chicago area, Jamie Breslin, director of the institution programs for the state-wide IMSA, introduced this region's field office coordinator, Dawn Waller, who handed out materials regarding the IMSA program explaining its purpose, objectives and other pertinent details.

Breslin said the IMSA staff is "so excited to have such stellar teachers on board doing

amazing things with the kids" then later added that the state organization is currently conducting a study concerning the impact of the program in terms of after school enrichment and professional development for both students and teachers.

As part of this study effort, students participating at the middle school level in IMSA like those at GMS are tracked when they go into high school to see what kind of courses they are taking and how they are achieving in those courses.

"We are a program that is first and foremost," Breslin continued, "about motivating kids in the areas of math and science and the way we do that is we develop curriculum around IMSA's core competency attributes. So we want kids to have the hands-on experience with math and science concepts, concepts that they need to know to help them become successful."

"In experiencing these concepts," Breslin went on, "the students get a deeper understanding of those concepts through simply applying and taking data, collecting it and analyzing it."

Breslin additionally told the District 110 Board of Education members that the IMSA staff people would like to know if there is anything else they can do to offer support to the IMSA program at Grant, which is in its sixth year and is the only one in St. Clair County, according to Barnes.

The work presented by the students represents a unit they studied on symmetry recently which included doing a lot of learning and scrutiny of the various aspects of

working with angles. As a result, the staff selected what they felt were some of the better miniature golf hole projects for showing to the board at this meeting.

The various holes included one based on a Hawaiian theme, another featuring colorful lighting and still another featuring something seen at a lot of full size miniature golf courses, a working windmill.

Students in the GMS IMSA program meet for two hours, from 3 p.m. to 5 p.m., after school every Monday afternoon. They are sixth, seventh and eighth graders who are taught and participate in exercises that stress the integration of math and science as intertwined, rather than independent, subjects.

The top 20 per cent of the students in those grades are invited to participate in the program at GMS with this year's including a total of 32 participants.

Actually based in Aurora, southwest of Chicago, the internationally recognized Illinois Mathematics and Science Academy develops creative, ethical leaders in science, technology, engineering and mathematics. As a teaching and learning laboratory created by the state of Illinois, IMSA enrolls academically talented Illinois students (grades 10 through 12) in its advanced, residential college preparatory program along



with serving thousands of educators and students in Illinois and beyond through innovative instructional programs that foster imagination and inquiry. IMSA also advances education through research, groundbreaking ventures and strategic partnerships.

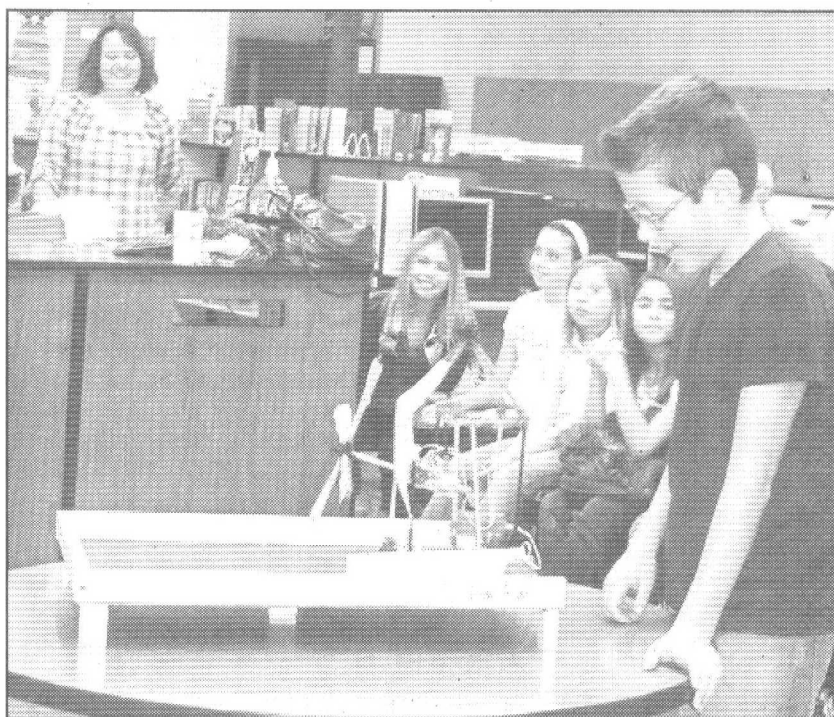
The GMS IMSA Fusion program is tied in with the high school academy located upstate in regard to its area of focus and enrichment for both the students and teachers.

IMSA is both a public residential preparatory institution for academically talented students and a catalyst and laboratory for the advancement of teaching

statewide, with responsibility to stimulate further excellence for all Illinois schools in mathematics and science. By design, IMSA is not actually a part of the K-12 educational system. Rather, IMSA is an independent state agency governed by an appointed Board of Trustees with a budget that is part of the Illinois higher education system.

IMSA's tuition-free residential educational program enrolls a diverse student body of 650 from all areas of Illinois with admission being highly competitive. IMSA delivers professional development programs for mathematics and science teachers and enrichment programs for elementary, middle and high school students. These are

offered at IMSA, at sites throughout Illinois and online. IMSA also advances education through research, groundbreaking ventures and strategic partnerships. Teachers in District 110 have attended IMSA workshops where they were able to pick up ideas for various projects and processes they could utilize at GMS.



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Jordan Blake's miniature golf hole he created as part of his IMSA project at Grant Middle School included a working wind mill.





**Above left:** A miniature golf hole with a Hawaiian beach theme was made by Christina Scott and her partner, who was unable to attend the District 110 Board of Education meeting last week, as their part of the Illinois Mathematics and Science Academy Fusion program study of symmetry and angles.

**Above right:** The team of Maddie Lane and Rylan Lopez represented two of the Illinois Mathematics and Science Academy Fusion program participants at Grant Middle School who presented their miniature golf holes, basing theirs on a Christmas theme.



Ryan McCarthy, left, and Jared Brockmeyer teamed up for a miniature golf hole they called "The Waffle", which they showed to the members of the District 110 Board of Education last week.

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