



TAKING PHYSICS OUTSIDE: HIGH SCHOOL STUDENTS PUT CONCEPTS INTO PRACTICE

NEWS FROM ACADEME *of the OAKS*

DECATUR, Ga., June 8, 2012 // Last week, on the next-to-last day of school, Dr. Tara Wyman's physics class at Academe of the Oaks, an independent high school grounded in Rudolf Steiner's Waldorf curriculum and philosophy, took place outdoors.

Aligned in a row on the basketball court, two-person teams of sophomores fired-up the projectile launchers they designed and built, using lessons studied in class, and aimed projectiles (small balls) at three distance targets (identified with a hula-hoop). Though the mechanisms varied in size and functionality (one catapult used air pressure), the small, portable model created by Sarah and Savannah won the accuracy contest hands-down. Bobby and Kaz won the distance competition.

"They spent a lot of time on it, and that is what this assignment is all about," said Dr. Wyman, who noted that the projectile launcher challenge is timed to follow trigonometry in students' mathematics skills track. "They are already familiar with kinematic equation variables for motion in two directions when we begin the contest."

"For most students, it's the hands-on aspect that brings it all together," she explains. "It synthesizes everything they've learned in an experiential way."

A recent scientific study confirms the power of hands-on learning experiences such as those emphasized at Academe (and central to Waldorf pedagogy).

"What we find is people really do change their brain functions in response to experience," says Kurt W. Fisher, the director of Harvard University's Mind, Brain, and Education Program. "It's just amazing how flexible the brain is. That plasticity has been a huge surprise to a whole lot of people."

By creating ways for students to employ classroom lessons in the practice of three-dimensional activities, Academe provides students with "opportunities to draw out the concept being introduced from their own perceptions," explains Dr. Wyman, who earned her Ph.D. in physical organic chemistry at UCLA.

Dr. Wyman's students also explored physical concepts first-hand in the form of a contest to construct the most efficient model bridge. Using rules adopted from the Chicago Regional Bridge Building Committee, two-person teams designed and built model bridges that were tested for load-bearing strength and aesthetics.

The winning model (right), which supported more than 90 pounds and was created by Nick and Ben, clearly demonstrated the principle that triangulation adds stability to structures.

Waldorf education emphasizes phenomenological learning over direct cognitive instruction. For example, the teacher sets up an experiment and calls upon the students to observe and discuss their findings so that they can discover the underlying formula or law—which produces independent thinking and sound judgment development naturally.

Founded in 2003, Academe of the Oaks offers a high school education without parallel in the Atlanta area. The rich, experiential Waldorf curriculum stimulates developing minds, and its close community of teachers is deeply committed to each student's total growth. Academe of the Oaks offers a challenging academic program, laying a strong foundation for postsecondary work, while fostering students' confidence to think independently and engaging their enthusiasm for learning. The accredited high school, located just east of downtown Decatur, offers ninth through twelfth grades.

For more information about the school, please contact Eva Handschin, school director, at (404) 405-2173, or visit <www.academeatlanta.org>.

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