About KA PiliNA

Ka Pilina: AIM Together is a 3-year research project at the Center on Disability Studies, University of Hawai‘i Mānoa, funded by the U.S. Department of Education, Native Hawaiian Education Program (Award #S362120030) to improve mathematics outcomes of 7th-12th grade students. Ka Pilina means The Connection in Hawaiian. This project aims to “connect” middle and high school students to math activities and resources that will improve their achievement in math.

Ka Pilina has three goals:

1. Strengthen students’ interests and skills in algebra;
2. Help students use math in their life and in science, technology, and engineering (STEM); and,
3. Help students become more successful in math as they transition into high school and into college.

To achieve these goals, students and teachers practice math skills by using examples from local and Native Hawaiian culture. Students and teachers also incorporate math computer programs into their math lessons at school. Students also work with mentors who are college students from the University of Hawai‘i system.

Our Participants

Students: Grades 7-12

Teachers: Math Teachers

Schools: James Campbell High School, Ilima Intermediate School, Ewa Makai Middle School and Ke Kula ʻo Samuel M. Kamakau Laboratory Public Charter School

Mentors: Students from the University of Hawai‘i system
Fall 2014 Community Days

Our Community Days for Fall semester were held on October 16 at Campbell High School for the Ewa Beach community, and on November 5 at Windward Community College for Ke Kula ‘o Samuel M. Kamakau LPCS. Ka Pilina staff and mentors were joined by the UH Mānoa Institute for Astronomy (IfA) and the UH Mānoa Math Department’s SUPER-M (the School and University Partnership for Educational Renewal in Mathematics) in presenting activity booths to students and their families. IfA taught us how to build a spectroscope out of recycled cereal boxes and a CD, how to assemble a telescope, and how to scale the solar system. SUPER-M used a giant scale to show us how much our waste (like soda cans) impacts the environment. Ka Pilina mentors and staff taught us about managing income and expenses to achieve our financial goals, about different forms of symmetry by making Hawaiian quilt patterns, and about how to build freestanding towers using recycled newspaper. For participating in all of the activities, participants had a chance to win great prizes at the end of each night—including gift cards and an ASUS tablet!

Winter Math Camp

The theme of our Winter 2014-2015 Math Camp was “Local Careers & Math.” Camp was held at the University of Hawai‘i West O‘ahu campus from January 6 to January 9, 2015. Over 50 middle school and high school students participated in this camp. Some of the exciting activities that students did to learn about math in different careers were learning about kinematic (projectile motion) equations and calculating percent accuracy with water balloon launchers, adjusting recipes using ratios and proportions with making pizza crackers and frosting for cakes, scaling measurements with building ginger bread houses, and exercising and converting calories. Students also created Glogs (graphic blogs) about careers of their choice. You can view them here: [http://tinyurl.com/HS-camp-glogs](http://tinyurl.com/HS-camp-glogs) and [http://tinyurl.com/MS-camp-glogs](http://tinyurl.com/MS-camp-glogs).

We also had field trips to the Pacific Aviation Museum, the Honolulu Pacific Club, the John A. Burns School of Medicine (JABSOM), and the University of Hawai‘i Cancer Center.

At the Pacific Aviation Museum, middle school and high school students were taken on tours of Hanger 37 and 79 to look at WWII and modern planes and helicopters. Students participated...
in hands-on activities in making paper airplanes to learn about lift, drag and horizontal surface area, and in
making hoover crafts out of a balloon, an old CD, and a film canister to learn about friction and properties of
pressure. Students experienced being pilots by operating flight simulators, interpreting simulator controls, and
flying planes in a number of real-world flying scenarios including: takeoff, landing, combat, and more!

At the Pacific Club, middle school students toured the facilities to
observe the daily operations of a high-end private club—including the
pool, gym, tennis courts, restaurants, kitchen, front desk, and managing
offices. Employees from catering, facilities, food and beverage,
marketing, and accounting, and even the club’s general manager spoke
with the students about how they use math in their jobs. Students tried
out different careers by reconciling a cash box, marketing a club event, and making their own fruit punch
following a recipe.

At JABSOM, high school students were greeted by the Dean of
JABSOM and the UH Cancer Center, Dr. Jerris Hedges, who spoke to
them about how math is used in the medical field. Then they heard
from Dr. Lynne Wilkens and Ms. Kami White from the UH Cancer
Center, and Dr. Kenton Kramer from JABSOM who shared their real
life portrayal of math at work. Students were also able to go on a tour
and try out the SimTiki Interaction lab, where they practiced
performing CPR on a robotic patient.

**Mentor Spotlight**

**Jason Pleski from Minneapolis, MN**

Q. What school do you attend and what is your major?
A. I’m currently attending Kapi‘olani Community College and am
working towards getting into their Radiologic Technology program.

Q. What kind of Ka Pilina events have you participated in?
A. I’ve participated in Fall Community Day event in Ewa Beach [at
Campbell High School] and Math Camp during winter break. We
went to the John A. Burns School of Medicine and the Pacific Aviation Museum as well as some
activities at UH West O’ahu. It was really fun! I’ve also mentored at Ilima Intermediate School last fall.

Q. What interests you most about Ka Pilina?
A. What interests me most about Ka Pilina is how enthusiastic and smart the students are. They have
good ideas and they’re hilarious.

**Student Responses to our Winter Math Camp:**

“I got to meet new people and learn a little more on how math can be applied in the world.” –Middle School Student

“...sometimes I didn’t even realize I was doing math because it was fun...” –Middle School student

“I liked how there were a lot of mentors and teachers in the class, and how we did more interactive group work.” –
High School student

“I learned a lot more about physics, projectile motion, proportions, ratios, and about how math and science are
connected to everything and are essential to making our lives how they are.” –High School student
Mahalo

Mahalo to the University of Hawaiʻi Institute for Astronomy and UH Math Department’s SUPER-M for providing booths at our Community Days; to the Pacific Aviation Museum, the Pacific Club, and the John A. Burns School of Medicine and the University of Hawaiʻi Cancer Center for volunteering your time to prepare and present tours and interactive lessons highlighting important math skills used in careers in your fields/industries; to Chef Justin Nip for his time and contribution to our food and restaurant industry career activities; to the teachers, mentors and volunteers who helped make our events fun and successful!

Links to Partnering Organizations and Field Trip Sites

Institute for Astronomy: http://www.ifa.hawaii.edu
SUPER-M: http://superm.math.hawaii.edu
Pacific Aviation Museum: http://www.ifa.hawaii.edu
The Pacific Club: http://www.thepacificclub.org
JABSOM: http://jabsom.hawaii.edu
The UH Cancer Center: http://www.uhcancercenter.org

Upcoming Events*

Teachers

Professional Developments: February 21, 2015; March 7, 2015; April 4, 2015; and May 2, 2015

Teachers and Students

Spring Community Days April 1, 2015 (Kamakau @ Windward Community College) and April 22, 2015 (Ewa Community @ Ewa Makai Middle School)

Spring Math Camp: March 17-19, 2015 @ the University of Hawaiʻi Lab School

Summer Math Camp: June 22-26, 2015

*Find our events and math camp applications available for download at: http://www.cds.hawaii.edu/kapilina/events/

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