

Canoe in the classroom

Hokulea navigators help teachers integrate math, science and more at Waimea Middle School

CATHERINE TARLETON

SPECIAL TO NORTH HAWAII NEWS

(MORE PHOTOS AVAILABLE ON OUR WEBSITE AT WWW.NORTHHAWAIIINews.COM)

"Navigating and wayfinding have all the different types of life skills and sciences you can teach," said Celeste Ha'o, programs assistant at Imiloa Astronomy Center of Hawaii. "Math, technology, art ... and so much more, all fall within the canoe."

Ha'o, along with Pwo Navigators Chadd Onohi Paishon and Chad Kalepa Babayan, visited Waimea Middle School on Dec. 18 as part of the 'Imiloa Astronomy Center's Mobile Science Outreach. The program—actually the "pilot phase" of their navigation module—covered nine different Big Island and Maui schools over the past six months, connecting eighth grade science studies with navigation and cultural practices.

Paishon and Babayan are among five Hawaiian "pwo," or master, navigators trained by "Papa" Pius Mau Pailug (1932-2010) who passed on the age-old oral teachings of celestial navigation. Mau's

training was instrumental in the 1976 maiden voyage of Hokulea, a double-hulled deep sea voyaging canoe. Since then, the Hokulea has inspired a revival of Polynesian voyaging culture, and its evolution, as evidenced in Hokulea's high-tech sister, Hikianalia. The two are scheduled to depart on a worldwide voyage in May.

"Navigating and wayfinding are endemic to this place," Ha'o said. "We have a legacy of exploration ... exploration of vast distances, based on the knowledge of our ancestors."

WMS eighth graders are working closely with the Hokulea and Hikianalia in culture-based learning experiences that align with common core curriculum.

"Knowing that we have the best scientists, the best engineers, possibly in the world's history, able to voyage thousands of miles from our coast. ... We come from that," Ha'o said.

The navigators' presentation

at WMS included hands-on learning, using scale models and deck diagrams, an inflatable planetarium, and introduction to the 32 "houses," or constellations in western astronomy, of the Hawaiian star compass and the canoe's 360-degree fixed compass, embedded into her deck.

According to the Polynesian Voyaging Society website, the star compass, based on Mau's teaching, was developed to help orient the canoe to the rising and setting points of stars.

"The compass has 32 equidistant directional points around the horizon, each 11.25 degrees from the next point (11.25 multiplied by 32 equals 360 degrees) ... To hold a course, the navigator aligns the rising or setting sun to marks on the railings of the canoe. There are eight marks on each side of the canoe, each paired with a single point at the stern of the canoe, where

See *Canoe*, Page 4



CLOCKWISE FROM TOP LEFT: Chadd Paishon works with WMS students during a visit on Dec. 18 at the school; Pwo navigator Chad Kalepa Babayan explains the embedded compass in the wa'a; WMS students rush into the inflatable planetarium. (PHOTO SCOURTESY OF WMS FOR NHN)

Pwo is a title, a benchmark of learning, and is the ninth of 15 degrees of achievement in the Werieng School of Navigation in Micronesia. In 2007, the late Papa Mau Pailug inducted five Hawaiians as pwo: Chad Kalepa Babayan, Milton "Shorty" Bertelmann, Bruce Blankenfeld, Chadd 'Onohi Paishon and Charles Nainoa Thompson. "Pwo" was explained to Thompson as "light, love, kindness and compassion. If there are conflicts, the navigator must resolve them; if there is sickness, the navigator's responsibility is to heal; if there is damage, the navigator must repair it. His kuleana is to sail and bring back gifts to his home island."