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Student course dives into the causes of tsunamis

Children learn to spot warning signs, build evacuation towers

BY RAY PITZ

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While the devastating 2004 Indian Ocean earthquake that triggered numerous tsunamis and killed more than 225,000 people is known to many students, the events that led up to that tragic event aren't as well known.

JONATHAN HOUSE / THE BEAVERTON VALLEY TIMES
STANDING STRONG – Wayna Jerry watches as a teammate tests their model evacuation tower built during the Tsunami Coastal Challenge, a weeklong camp.

But that won't be true for the 17 students attending this week's Tsunami Coastal Challenge, a weeklong camp put on by the National Science Foundation Science and Technology Center for Coastal Margin Observation and Prediction at Oregon Health and Science University's Walker Road campus.

The course is being sponsored by Saturday Academy.

On Monday, Alicia Lyman-Holt of Oregon State University's Wave Lab Research Facility, gave students a primer on the ins and outs of tsunamis, followed by some hands-on experiences.

"What these students are building are coastal evacuation towers," said Lyman-Holt as students used pre-packaged, small pieces of wood to create the types of structures they believed would withstand an actual tsunami.

Lyman-Holt said construction of the towers is a good way to get young people thinking about careers in engineering, proving to them that science and math are not boring subjects.

Although no such towers currently exist, they might someday.

"It's a (potential) solution for the Oregon Coast," said Lyman-Holt. "Japan has these towers."

What is currently a reality, Lyman-Holt explained, is the threat of a future earthquake, followed by huge waves that would wipe out Oregon coastal communities.

That earthquake, which could be anywhere from 9.0 to 9.5 on the Richter Scale, would be followed 20 to 30 minutes later by a devastating tsunami. Such a catastrophic event happens once every 300 to 500 years, said Lyman-Holt.

"This is a very dynamic hands-on (activity)," she said as students used double-sided tape to attach their towers together.

To test the towers' mettle, Lyman-Holt said she planned to take the structures back to the Oregon State wave basin, the world's largest facility for studying tsunamis, to see which ones would withstand a 30-centimeter-tall wave. That test was supposed to have taken place yesterday (Wednesday) after press time and students were able to view them live via a Web cam.

David McCracken, who attends Boise-Elliot K-8 in Portland, said the most interesting thing he learned Monday was about how movement of underwater plates affects tsunami waves.

McCracken said he and his partner tested their tower by shaking it and is hopeful it survived

Wednesday's test.

Likewise, Lamson Vu, who attends Summa South at Beaverton's Whitford Middle School, said he was learning a lot as well, including the need to head to higher ground during a tsunami.

"I like how we learn a lot of new words and (had) lots of hands-on activities," said Vu.

And will his tower survive the wave test?

"Maybe," said Vu.

Karen Wegner, director of K-12 Education for OHSU's Center for Coastal Margin Observation and Prediction, said by the end of the week students would have to produce their own public service announcement regarding tsunami warnings. The goal is to make sure students understand aspects of tsunami science.

In addition, students must create their own tsunami poster.

Wegner said the students also watched a You Tube clip of Tilly Smith, the British girl who used her knowledge of tsunamis to warn of the approaching event during the 2004 Indian Ocean quake. Smith observed the bubbling water and realized the warning signs of an imminent tsunami. The girl was able to warn others because of a video she saw in one of her classes.

Her actions are believed to have saved at least 100 lives.

"I wanted them to see that a 10-year-old girl could change people's lives because of a geography class," said Wegner.