

GEAR UP ENGINEERING SUMMER SCHOOL



A man powered coconut grinder

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Want to know how to build a bridge? Coconut tree climber or coconut grinder? - Ask GEAR UP students.

After seeing what happened this summer, GEAR UP team is convinced that it will raise a group of future engineers who will lead the way in this technologically advanced world. Throughout June and July, GEAR UP conducted its engineering summer school in its 6 target schools: Awak, Kolonia, Nett, Ohmine, Saladak, and Sekere. LEGOs were leading the curriculum, as an experimental education tool. The curriculum strengthened math and physics background; built vocabulary in the engineering field; and raised interest in the various engineering professions available on Pohnpei. GEAR UP 7th graders learned about the

engineering design process and put it into practice by creating innovative bridges, tunnels and simple machines from LEGOs. The students took the challenge home and created designs from locally available materials. As a result, students assembled bridges, tunnels and houses from wood, pipes, palm tree leaves and other resources.

The students listened to engineering presentations and interacted with engineers from a number of fields including: civil, renewable energy-related; electrical, mechanical engineering, and more.

On field trips, students discovered engineering-related courses at Pohnpei campus and how they get energy from the Power Plant in Nanponmal.



"Beam Bridge" presentation



Learning about engineering processes

STUDENT CHALLENGES: ENGINEERING DESIGNS

At the end of each session, students raised to the challenge by indicating engineering issues in Pohnpei and proposing creative solutions. One of the groups from Ohmine/Sekere session proposed to connect Sokehs island to Dekehtik by a "beam bridge". The group described the size of the bridge, compression and tension, the materials that were used, and financial plan.

"The Greeks" group from Nett/Kolonia session brought up an idea and built a man powered coconut grinder that would be environmentally friendly and improve daily routine.

"Archemedes" group from Nett/Kolonia session built coconut tree climber that would help to get coconuts easy.

"Egyptians" group from Nett/Kolonia presented a school design of stairs and ramp that would help students in wheel chairs to get to the classrooms.

One of the groups from Awak/Saladak session built a pinwheel from LEGOs and explained that it was a prototype for a wind mill that could produce wind power.

"A lot of new things! Great Opportunity! New friends!" - GEAR UP students



Awak/Saladak students building structures and simple machines with LEGOs

GEAR UP Students Are Excited...

Rico Setik, Nett School: "Oh, wow...many things to say about the summer camp: first, I learned about simple machines using LEGOs; second, it was fun because I made new friends from Kolonia school; third, I am motivated to do the best I can to improve my grades when I get to 8th grade."

Kleopatra Villagomez, Awak School: "I learned a

lot of new things. I learned about new places. I learned what engineering is about."

Nerissa Syne, Sekere School: "Summer camp gave me a great opportunity to meet new friends and, most important, I loved working on the LEGOs...It was fun and exciting."

Joyce Albert, Saladak School: "I learned new things about engineering. Summer camp was fun

because I made new friends from Awak School."

Bryan Steven, Ohmine School: "I learned how to build small machines using LEGOs...It was fun and I enjoyed getting to know other kids and other teachers from Sekere."

Terell Elanzo, Kolonia School: "Summer camp was fun and I enjoyed it. I learned new things and understood what engineering means. I also made new friends from Nett School."

Feedback from GEAR UP Teachers

teach lessons on engineering, especially using LEGOs."

Jimmy Gallen, Kolonia, and Altrickson Likor, Nett, Arsenio Wilson, Nett: "We really liked the fact that we put two different schools and students with different backgrounds together to work and study because students got to experience it before entering high school where they would meet different students. The students made new friends and got an understanding of what engineers do. They seemed to be very happy, curious and excited when working with LEGOs."

Dayson Talley, Kolonia: "What I liked most about the summer camp is the interest of students regarding the new things they learned about structures and simple machines."

Taylor William, Ohmine: "This program helped me a lot. I also trained students in many ways concerning structures/simple machines. At the end of the summer camp I could see—students benefited from this summer camp."

Delbertson Rodriguez, Ohmine: "The summer camp presentations were most spectacular. The students did

not only achieve enlightenment? but also had fun during their learning. The strategies that were applied during the summer camp brought out the students' interest in learning so I was really impressed. I applaud the GEAR UP Program for engaging our students in quality learning."

Steven Joel, Kolonia, and Henerigo Dadius, Nett: "This is our first time to experience summer camp in Pohnpei. The "hands-on" approach—students building with LEGOs—was the most effective tool. Some students who are not performing well academically were very active in using "hands on". We felt it encouraged learning and creative thinking. We also liked friendships developed and students ability to communicate with each other during the program."

Yasuhiro Kudo, Ohmine School, and Johnnyber Hairens: "We liked the organization. It created ways for students and teachers to communicate and learn from one another. It has been effective for both students and teachers. We also liked the fact that both slow and quick learners benefited from the summer camp."



Students, Teachers and GEAR UP team after Kolonia/Nett summer session.

Benrita Petrus, Sekere, and Beaumina Soswa, Awak: "The summer camp was a great experience for us. We learned so much so as the students. The interactions between teachers and students were excellent. The summer camp also made us think of incorporating technology into our daily lesson plans to make them interesting for students. It was awesome!"

Trinitina Henry, Kolonia: "I was really impressed by the student presentations on the last day. They really impressed us by making such designs that we never seen before. The best thing was that students really enjoyed working together and also working with the LEGOs."

Aliksa Johnyboy, Kolonia, Paul Cantero, Ohmine, Alexander Ponapart, Dennis Rosario, and Dagger Soulik, Nett: "The summer camp was very interesting and also challenging at the same time. We did learn many things from the teachers, specialists and students. It was our first time to actually

GEAR UP Personnel is Happy!

Amber Ham, Education Specialist: "I knew that the GEAR UP teachers and students would rise to the challenge this summer. It was amazing to see staff working together and students developing innovative machines and structures. The day of challenges was a rewarding experience for all. I still get chills up my arms when I think back to the last day of camp."

Morehna Santos, Students Services Specialist: "GEAR UP summer camp 2011 was one-of-a-kind...unique in its approach and exciting for the students! My experience at summer camp was great, I had

an excellent opportunity to learn and interact with students and colleagues. I enjoyed seeing the students being motivated and engaged in this learning environment (Go LEGOS!)"

Nora Kriauzaite, Program Director: "It was fascinating to hear teenagers discussing engineering challenges and proposing solutions, even financial plans! That part was most rewarding for me. I trust that we are raising some excellent engineers."

Penny Weilbacher, Pohnpei Campus Director: "GEAR UP

is doing a good job in unlocking the potential of its participants. This was evident during the summer program closing activities. In watching the students' presentations, I felt so grateful that we are able to offer these children six years of educational opportunities and mentoring. I am confident that the GEAR UP will bring brighter and better future for these children."



Student built tunnel from grass

Big Support from Engineering Specialists

"Engineers solve human problems! You want to solve human problems? - You need to become an engineer! - Engineers-presenters

GEAR UP is very lucky to have such an eclectic group of engineers on Pohnpei. Teachers and students alike were unsure of engineering and what it meant. It was enjoyable for them to learn from current professionals from both Pohnpei and around the world. As a result, students and teacher

were excited to hear educational and inspirational speeches of engineers! The students can now explain what engineers do in their daily routine; what they had to study to become engineers; and what opportunities exist within the engineering field.



Mr. Luke Dragovich, US Navy Engineer explains tension



Mr. Gardner Edgar, Chair of Trade and Technology Division at Pohnpei Campus, explains electrical engineering

Some Fun....



US Navy plays for GEAR UP students at Ohmine

Although it rained and poured, students, teachers, and community members jived to the jazz, funk, and blues sounds created by the acoustic Navy Band. Students were amazed to see brass instruments including the saxophone, trumpet, trombone, and tuba.



Mr. Emanuele Taibi, Energy Specialist at SPC, explains renewable energy.

GEAR UP Program

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GEAR UP is a 6-year US Department of Education funded program. The main goal of the GEAR UP is to assist 410 low-income students improve their academic skills and strengthen their motivation so that they complete elementary school, enroll in high school, and with much support and assistance, enter a postsecondary education institution. The program targets six elementary schools in Pohnpei, FSM: Awak, Saladak, Sekere, Kolonia, Nett and Ohmine. GEAR UP began February 2011 and enrolled 410 7th graders in all of the 6 target schools. The program will continue providing support services including but not limited to counseling, academic, recreation, and career awareness to the same students until they complete their senior year of school.



Parents' donations for GEAR UP summer school



Student Homework: Houses from branches and paper



Student incentive ceremony

Our great appreciation for donations and support for GEAR UP summer camp to:

Etschreit Enterprises
FSM Telecommunications
FSM Petroleum Corporation
Bank of FSM
Ace Office Supplies
Pohnpei Arts & Crafts
Pohnpei Port Authority
Pohnpei Public Library
Do It Best
Blue Nile
True Value
GEAR UP Parents

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Amanda Korell, Peace Corps Volunteer
Maureen Curtin, World Teach Volunteer
Sizue Yoma, Micronesia Red Cross Society
Morgan David, HIV/AIDS Officer, Micronesia Red Cross Society

Melyann Malarme, Praise Santos, First Aid Officers, Micronesia Red Cross Society
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Dackson Solomon, Pohnpei Utilities Corporation
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Carlos Geronimo, Civil Engineer, TC&I, FSM National Government
Gary Wiggins, Engineer-Contracting Officer, TC&I, FSM National Government
Emanuele Taibi, Energy Specialist, Secretariat of the Pacific Community



Some of the donations for student incentives.