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For information contact:

Lesley Kriewald
Texas A&M University at Qatar
Lesley.Kriewald@qatar.tamu.edu
+974.4423.0424

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Students design hovercrafts for coastal cleanup to learn engineering concepts during Texas A&M at Qatar camp

Nearly 40 students in grades 7 through 9 from eight local schools across Qatar recently participated in Engineering Explorers STEM enrichment program hosted by Texas A&M University at Qatar.

The thirty-six students — 24 girls and 12 boys — represented Hayat Universal School, Dukhan English School, Qatar Academy, Qatar Academy Sidra, Awsaj, Sukaina Preparatory School for Girls, Gharnata Girl Preparatory School for Girls and AlBayan Girls Preparatory.

The four-day event aimed to familiarize young students with engineering and the science behind it. The program included science activities, hands-on engineering projects and contests to challenge students' math and science skills. Students learned about science concepts, design, teamwork and creativity through interactive activities conducted in Texas A&M at Qatar's STEM Hub, funded by Qatar National Research Fund.

Engineering Explorers is the latest in a series of STEM (science, technology, engineering and math) workshops offered by Texas A&M at Qatar. The workshops are designed to interest bright, young students in pursuing engineering and science career paths to develop the scientific workforce Qatar needs to reach the goals of Qatar National Vision 2030.

Built around the engineering design and fabrication processes, Engineering Explorers teaches students how to solve problems systematically and understand how to implement STEM basics into their future science projects. With a theme of using technology for coastal cleanup, the students designed a battery-powered hovercraft capable of cleaning the coastline offshore and onshore.

The students researched hovercraft theory and ways in which components of the hovercraft contribute to how it works. They then implemented their designs using 3D printing technology.

The workshop ended with a competition between the fabricated hovercrafts to evaluate design, speed, payload and reliability in coastal cleanup. “The Mechanics” comprising students from Qatar Academy Sidra and Dukhan English School won the first prize for their design, exceptional teamwork and outstanding construction.

Dr. César O. Malavé, dean of Texas A&M at Qatar, said, “Texas A&M at Qatar is dedicated to helping Qatar meet its need for new engineers that will move the country toward its goals. Through engaging STEM programs such as Engineering Explorers, we hope to inspire a new generation of engineering leaders who will drive Qatar to its future success.”

Dukhan English School student and returning participant Khalid Hamad Al-Jabari, who said he wants to be an electrical engineer like his dad, said, “Engineering Explorers is a challenging program, which taught me how to create a machine from scratch using the engineering design process. Texas A&M at Qatar programs show how engineers use their talent to turn dreams into reality and this gives me an idea what to expect in the future.”

Cynthia Bolton, Gifted Coordinator for Qatar Foundation, said, “The Texas A&M University at Qatar Engineering Explorers program gave our students an exceptional opportunity to see science in action in a collaborative environment with like-minded peers.”

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About Texas A&M University at Qatar

Since 2003, Texas A&M University has offered undergraduate degrees in chemical engineering, electrical engineering, mechanical engineering and petroleum engineering in Qatar Foundation’s Education City, and graduate degrees in chemical engineering since fall 2011. Texas A&M at Qatar has awarded nearly 850 degrees. All four undergraduate engineering degree programs are accredited by the Engineering Accreditation Commission of ABET. Faculty from around the world are attracted to Texas A&M at Qatar to educate the next generation of engineering leaders in Qatar and to conduct research valued at more than \$236.4 million that address issues important to the State of Qatar. Visit www.qatar.tamu.edu.