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Daniel Hayes measures the height of an "Eiffel Tower" built entirely of plastic straws during Tuesday's 2018 Oklahoma Engineering Foundation Engineering Fair at Science Museum Oklahoma in Oklahoma City. [PHOTOS PROVIDED BY OCAST]

Engineering Fair promotes design success and failure

BY JIM STAFFORD
For The Oklahoman

With a measuring tape in hand, Daniel Hayes knelt down on the floor of the Science Museum Oklahoma on Tuesday morning to gauge the height of an "Eiffel Tower" made entirely of plastic straws.

The tower came in at just under 10 inches, but it wasn't the height that mattered so much to Hayes, a judge in the annual Oklahoma Engineering Foundation's Engineering Fair. For Hayes, a reservoir engineer with Chesapeake Energy, it was all about the process that middle and high school students went through to build their towers.

The Engineering Fair promotes interest in STEM — science, technology, engineering and math — to its participants.

"The Engineering Fair is fun and the Science Museum is a great venue," Hayes said. "But it is promoting competition and all different aspects of engineering, which I think is really powerful. It allows kids to try new designs and meet kids that are interested in engineering from other schools." Hayes, 30, knows first-



A Pawnee Middle School team of, from left, Serynity Rothun, K.J. Stewart and Beau Dominey attempt to seal off the oil reservoir from which they worked to pump out the oil in competition Tuesday during the 2018 Oklahoma Engineering Foundation Engineering Fair.

hand about the power of engineering competitions. An Owasso native, he got his first taste of engineering in a similar event in Tulsa while in high school.

"I remember it being fun, and I just gravitated toward math and science," Hayes said.

From there he went on to earn a degree in mechanical engineering at Oklahoma State University, and then to Chesapeake.

'Perseverance through adversity'

The 2018 Engineering Fair featured competition in categories such as tower building,

oil extraction, bridge building, Ping-Pong ball launcher, rubber band powered vehicle and a Rube Goldberg-type contraption known as the wacky wonder works.

Despite being delayed a week by weather, the Engineering Fair drew about 300 students from across Oklahoma. Presenting sponsor was the Oklahoma Center for the Advancement of Science and Technology through a grant from the GE Foundation.

Hayes judged multiple heats of Eiffel Tower competition, where students started from scratch with a five-minute time limit.

Judges called out pass-

ing minutes as competitors scrambled to erect a tower of plastic straws, then set a ceramic plate on it before time elapsed.

At the conclusion of their heat, a pair of Fort Cobb High School students, Makayla Vasquez and Madi Griffin, both 16, dismantled their tower and discussed the challenge they had just faced.

"The most challenging part was getting it to stay up and getting it to hold the plate," Vasquez said.

"And the time," added Griffin. "If we had more time, we probably could have made it taller."

Adrianne Covington Graham, executive director of the Oklahoma Engineering Foundation, said the Engineering Fair introduces students to the engineering design process, which can be a lot like building an Eiffel Tower out of plastic straws.

"You create something and there is always room for improvement," Covington Graham said. "So it's perseverance through adversity."

Jim Stafford writes about Oklahoma innovation and research and development topics on behalf of the Oklahoma Center for the Advancement of Science & Technology (OCAST).

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